

SURAT TUGAS

Nomor : 0101/08.FF/UBK/VIII/2021

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Demikian surat tugas ini, atas perhatian dan kerjasamanya kami ucapkan terima kasih.

Bandung, 25 Juli 2021

Dekan Fakultas Farmasi



Dr. apr. Patonah, M.Si.

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ABSTRACT

Inhibitory activity of α -glucosidase enzymes from binahong leaves (*Anredera Cordifolia* Ten.Steenis), brotowali stems (*Tinospora crispa* (L.), cherry leaves (*Muntingia calabura* L.) and their combinations

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Diabetes mellitus is metabolic disorders characterized by hyperglycemia. Diabetes mellitus is a silent killer because patients often do not realize it, so many treatments should be done to control blood sugar in the body. One of the treatment was by natural medicine. Binahong (*Anredera Cordifolia* Ten.Steenis), brotowali (*Tinospora crispa* (L.) and cherry (*Muntingia calabura* L.) based on several studies are medicinal plants that can be used to lower blood sugar levels. This research was examined the inhibitory activity of α -glucosidase enzymes of each extract and also the combination of extracts. In vitro experimental with the α -glucosidase enzyme inhibition method. The IC₅₀ value of each extract and its combination was determined, with acarbose used as a comparison. The results showed the inhibition of α -glucosidase activity in IC₅₀ value of binahong leaves, brotowali stem, and cherry leaves respectively were 26.13 g/mL, 29.12 g/mL and 35,080 g/mL. Acarbose as a standard showed IC₅₀ value at 47,093 g/mL. In the combination of binahong, brotowali and cherry extracts, the highest percentage of inhibition was found in the ratio of binahong:brotowali (2:1). Extracts from binahong leaves, brotowali stems and cherry leaves have potential as α -glucosidase inhibitors in treating type 2 diabetes mellitus.

Key word : α -glucosidase enzymes, binahong leaves (*Anredera Cordifolia* Ten.Steenis), brotowali stems (*Tinospora crispa* (L.), cherry leaves (*Muntingia calabura* L.), combination



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The 6th AASP Pharmacy Education Forum

"Inter-professional education for
better outcome therapy"

 29-31 July 2021

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WELCOME REMARKS FROM THE ORGANIZING COMMITTEE

Assalamu'alaikum w.w.



6th AASP 2021

Good morning ladies and gentlemen,

First of all, on behalf of the Organizing Committee, it is our great pleasure to welcome you this morning to The 6th AASP Pharmacy Education Forum with the theme of "Interprofessional education for better outcome therapy". It will be a great, actual and interesting theme in terms of Health and Pharmaceutical Sciences especially to strengthen Interprofessional education. The theme is inline with the spirit of AASP, accelerating cooperative advancement of pharmacy education as well as research amongst pharmacy schools in Asia.

The event is organized by Asian Association of School of Pharmacy and hosted by Indonesian Pharmacy Higher Education/AIPHE. The 6th AASP Pharmacy Education Forum

invites speakers from Asia Countries, who will deliver interesting insights through the academic forum. Programs of Dean Forum consists of seminars plenary lectures, invited lectures, oral presentations and poster presentations.

We are still fighting Covid-19. I do believe that we can win against covid-19. Collaboration among Asian countries during a pandemic is very important to fight Covid-19. Even though We are still facing the Covid-19 Pandemic, we organize The 6th AASP Pharmacy Education Forum using an online platform. However, I do wish the participants still get more benefits, experiences and knowledge from the event.

Sincerely yours,

Prof. Agung Endro Nugroho, Ph.D.

Co-Chairman

The 6th AASP Pharmacy Education Forum



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Dear Educators, Colleagues and Students,



6th AASP 2021

Pandemic of Covid-19 has completely changed the educational landscape and forced many universities to close their doors. Covid-19 also upends everything we are familiar with education and research in higher education for a while.

Asian Association of Schools of Pharmacy (AASP) is a platform established in April 2001 for accelerating cooperative advancement of pharmacy education as well as research amongst pharmacy schools in Asia, thus the AASP Pharmacy Education Forum aims to facilitates deans, educators, students, and who have interest in pharmacy education to share and disseminate their experiences.

It is our honor that Association of Indonesian Pharmacy Higher Education (AIPHE = APTFI, *Asosiasi Pendidikan Tinggi Farmasi Indonesia*) has been appointed by AASP to host the

6th AASP Pharmacy Education Forum. We have tried to invite distinguished speakers from Asian countries and other continents to share their knowledge, expertise and experiences. The forum will offer a valuable opportunity for interaction and networking among educators as well academia/scientist from the different institutions in Asia.

Again, we thank AASP for giving chance to host the 6th AASP Pharmacy Education Forum 2021. We also greatly thank all speakers and participants for your participation in this forum. I hope you will have fruitful discussion and good initiation to setup a new collaboration.

Sincerely yours,

Prof. Daryono Hadi Tjahjono, Ph.D.

President

Association of Indonesian Pharmacy Higher Education (AIPHE)



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Dear Participants, Friends and Members



6th AASP 2021

This is a Professor Beom-Jin Lee, the president of Asian Association of Schools of Pharmacy (AASP). As you know, the COVID-19 pandemic is again reaching a serious state around the world. Despite this situation, I am very pleased to welcome to the 6th AASP Pharmacy Education Forum in the form of virtual meeting on July 29-31, 2021. For more than 20 years, to advance pharmacy education, pharmacy and pharmacy practice, AASP has served as a platform to share pharmacy expertise and promote mutual networking among Asian schools of pharmacy. In the era of the 4th industrial revolution, we must constantly strive for the future and professional development of pharmacy education. I think the main topic "Inter-professional education for better outcome therapy" is very important and timely. I am deeply grateful to

the invited lecturers who give lectures on future education and practice in various pharmacy fields. This forum gives a great opportunity for participants and professionals from academia to share and discuss the most up-to-date trends of pharmacy education and practice at the dynamic environments. The forum also provides you with the opportunity of the social networking and scholarly interaction with your colleagues. Finally, I appreciate organizing Chairman, Daryono Hadi Tjahjono (President of Association of Indonesian Pharmacy Higher Education/AIPHE), Co-Chairman, Agung Endro Nugroho (Dean of Faculty of Pharmacy, Universitas Gadjah Mada), all Scientific Committee, and Advisory Board members who devote themselves to make this forum successful. I wish you all health and peace.

Sincerely yours

Asian Association of Schools of Pharmacy (AASP)



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Program of 6th AASP Pharmacy Education Forum 2021
Theme of the forum: *Inter-professional education for better outcome therapy*

Plenary & Invited Lectures

Thursday, 29 July 2021

Time (GMT+7; Jakarta Time)	Agenda
08:30-09:00	Opening Ceremony <ul style="list-style-type: none"> ○ Report by Co-Chairman (Prof. Agung Endro Nugroho) ○ Opening Remark by AASP President (Prof. Beom-Jin Lee)
	Chair: Prof. Ken-ichi Inui
09:00-09:40	Prof. Kari L. Franson (School of Pharmacy, University of Southern California, US) <i>Key Elements of Successful Interprofessional Practice & Education (IPE) Program</i>
09:40-10:10	Dr. Chanuttha Ploylearmsang (Faculty of Pharmacy, Mahasarakham University, Thailand) <i>IPE Clinical Pharmacy in Thailand</i>
10:10-10:40	Prof. Umi Athiyah (Faculty of Pharmacy, Universitas Airlangga, Indonesia) <i>Experient in conducting IPE Clinical Pharmacy</i>
10:40-11:00	<i>Coffee break</i>
	Chair: Prof. Agung Endro Nugroho
11:00-11:40	Prof. Yang Jingyu (School of Life Science and Biopharmaceutics, Shenyang Pharmaceutical University, Shenyang, China) <i>High-level pharmacist cultivation focusing on the professional competence-A pharmacist-physician collaborative training mode</i>
11:40-12:10	Prof. Yahdiana Harahap (Faculty of Pharmacy, Universitas Indonesia, Indonesia) <i>The role of bioanalysis in connecting of pharmaceutical sciences and clinical pharmacy</i>
12:10-13:00	<i>Lunch</i>
	Chair: Prof. Paul WS Heng
13:00-13:40	Prof. Hisakazu Ohtani, Ph.D. (Faculty of Pharmacy, Keio Univ, Japan) <i>Unique perspectives of pharmacy education in Japan - core curriculum and advanced education</i>
13:40-14:20	Prof. Li-Jiuan Shen (School of Pharmacy, NTU, Taiwan) <i>Pharmacy School Core Curriculum in Taiwan</i>
14:20-15:00	Prof. Ibrahim Jantan (Institute of Systems Biology (INBIOSIS), Universiti Kebangsaan Malaysia (UKM), Malaysia) <i>Transformation in pharmacy education in Malaysia</i>

Friday, 30 July 2021

	Chair: Prof. Fe-Lin Lin Wu
08:00-08:40	Prof. Ralph J. Altieri (University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences, USA) <i>Curricula in pharmacy education</i>
08:40-09:20	Prof. Hideyo Takahashi (Faculty of Pharmaceutical Sciences, Tokyo University of Science, Tokyo, Japan) <i>Current education in medicinal chemistry in Japan: Toward the integration of basic and clinical science</i>
09:20-09:40	<i>Coffee Break</i>



	Chair: Prof. Beom-Jin Lee
09:40-10:20	Prof. Yolanda Robles (College of Pharmacy, University of the Philippines, Manila-Philippines) <i>Bridging gap between pharmacy education and practice through relevant pharmacy courses</i>
10:20-11:00	Prof. Jae Hoon Cheong (School of Pharmacy, Jeonbuk National University, Republic of Korea) <i>Establishment of the curriculum for 6 years pharmaceutical education-Based on the Delphi survey with Korean Pharmacy experts</i>
11:00-13:00	<i>Lunch & Friday Prayer</i>
	Chair: Prof. Yolanda Robles
13:30-14:10	Prof. Younghwa Na (College of Pharmacy, CHA University, Republic of Korea) <i>Pharmacy school education system and license test in Korea</i>
14:10-14:40	Prof. Triana Hertiani (Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia) <i>IPE in teaching herbal medicine</i>

Saturday, 31 July 2021

Oral Presentation

Time (GMT+7; Jakarta Time)	Chair: Prof. Yandi Syukri
08:00-08:10	Sabtanti Harimurti
08:10-08:20	Dyah Aryani Perwitasari
08:20-08:30	Azizah Vonna
08:30-08:40	Frances Lois Ngo
08:40-08:50	Hui Yu Chung
08:50-09:00	Bayu Eko Prasetyo
09:00-09:10	Iswandi
09:10-09:20	Marie Cicelie Ng
09:20-09:30	Amelia Lorensia
09:30-10:00	<i>Coffee Break</i>
	<i>Closing Ceremony</i>
10:00-10:15	Announcement of Best Oral & Poster Presenters
10:15-10:20	Closing Remarks

Poster Presenter

- (1) Poster presenter should upload their presentation material through their personal account not later than 26 July 2021 through website of 6th AASP Pharmacy Education Forum.
- (2) All registered participants and speakers can visit all posters through personal account (Wednesday (28 July) 09:00 to Saturday (31 July) 16:00 Jakarta Time).

Media for Virtual Conference

Zoom Link: <https://bit.ly/aasp6th2021>

Meeting ID: 815 8577 7070

Passcode: aasp2021

- (1) Speakers and presenters should join the zoom 10 minute before giving lecture/ presentation.
- (2) All participants should mute the microphone during the lectures/presentations, except in the Q/A or discussion session for giving comments or ask questions.



General Guidelines

6th AASP Pharmacy Education Forum 2021

I. Ground rules

1. During the lectures, your microphone will be automatically muted.
2. You will have the opportunity to engage with the panelists and each other via online chat room.
3. Please be respectful to other participants and panelists. Keep your comments on topic and be concise.
4. You may submit your questions to the panelists in the Q&A window or directly during the Q&A session.
5. Please, mention the panelists 'name to address your question.
6. You will have to fill in the attendance list posted by the committee via online chat room.
7. Please, do not post any request for technical support in the chat room.

II. Rundown of Plenary lectures

1. Opening by chairman
2. Ground rules (VB will be shared by the committee)
3. Introduction panelist 1 by chairman
4. Lecture 1 (35')
5. Q&A (5')
6. Announcement of next session by chairman
7. Hand in the certificate by chairman
8. Photo session
9. Closing session by chairman

III. Rundown of scientific oral presentation

1. Opening by moderator
2. Ground rules (VB will be shared by the committee)
3. Oral presentation each (8')
4. Q & A (2')
5. Closing session by moderator



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BIOGRAPHY OF PLENARY SPEAKERS



Prof. Hideyo Takahashi, Ph.D.



6th AASP 2021

Prof Hideyo Takahashi was born on July 1st, 1965, Shizuoka, Japan. She earned her bachelor's in pharmaceutical chemistry from Faculty of Pharmaceutical Sciences, Tokyo University, Japan in 1988, and acquired a license of pharmacist. Her master and Ph.D. degree in pharmaceutical chemistry were obtained from Tokyo University in 1994.

Hideyo Takahashi has joined Faculty of Pharma Sciences, Teikyo University as an assistant professor in 1994. In 2006, She was promoted to Professor in Teikyo University. In 2018, Hideyo Takahashi moved to Tokyo University of Science as a Professor in Medicinal Chemistry.

Hideyo Takahashi has research interest in synthesis of bioactive compounds, the dynamic stereochemistry in atropisomeric systems, photochemical reaction of chiral compounds, and development of the therapeutic agents for Menkes disease



Prof. Ohtani Hisakazu, Ph.D.



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Prof. Ohtani graduated from the Faculty of Pharmacy, The University of Tokyo in 1990 and earned his bachelor's degree. In 1994, he started his career as a pharmacist at the University of Tokyo Hospital. After obtaining his doctoral degree in 1999, he moved to the Faculty of Pharmacy, Kyushu University as an associate professor. He returned to the Faculty of Pharmacy, The University of Tokyo in 2005. In 2007, he learned drug informatics and pharmacometrics at Kaiser Permanente (CA, USA) and The University of Sheffield (U.K.), respectively. He moved to Keio University Faculty of Pharmacy in 2009 and works now as professor of the Division of Clinical Pharmacokinetics. In Keio University, he had once worked as the head of the Center for Pharmaceutical Care Sciences, which manages the clinical rotation program for the undergraduate students in Keio University Faculty of Pharmacy.

Prof. Ohtani's research interest is in the field of drug informatics, clinical pharmacokinetics and personalized medication. His recent interests include the analysis of interindividual differences in the gastrointestinal absorption, metabolism and drug-interactions mediated by transporters and cytochrome P450 enzymes. His group recently found novel inhibitors of organic anion transporting polypeptides (OATP) 1A2 and 2B1 from fruit juices.

Until 2017, Prof. Ohtani had worked as a board member of the national examination committee for pharmacists (pharmacist examiner) in Japan for six years. Now he works as a member of Pharmaceutical Affairs and Food Sanitation Council, MHLW (the Ministry of Health, Labour and Welfare), and an external expert of PMDA (Pharmacy and Medical Device Agency) in Japan. He is also the Editor in Chief of the Journal of Pharmaceutical Health Care and Sciences. He has served as a Reserve Major in JGSDF (Japan Ground Self-Defense Force) reserve for almost 10 years.



Prof. Dr. Ibrahim Jantan



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Prof. Ibrahim Jantan graduated from University of Mansoura, Egypt with BPharm (Hons) degree in 1981, obtained his MSc in Medicinal Chemistry from University of Minnesota, USA in 1985, and his PhD degree in Natural Products Chemistry from the University of Malaya in 1993.

He is currently an honorary professor at Institute of Systems Biology (INBIOSIS), Universiti Kebangsaan Malaysia (UKM). Prior to his present position, he was a professor at Taylor's University, Malaysia, from 2018-2020. He was with the Faculty of Pharmacy UKM from 1996-2018 and was the founding dean from 2008 to 2015. Dr. Ibrahim started his research career at the Forest Research Institute of Malaysia (FRIM) in 1986.

He was the President of the Malaysian Natural Products Society (2010-2020), member of the Malaysian Herbal Council, board member of Asian Association School of Pharmacy and Malaysian Focal Point for Medicinal Plants of Malaysia for Indian Ocean Rim Association. Recently, he was appointed as Research Advisor of Nan Yang Academy of Sciences (Singapore) and Scientific Advisor of Human Life Advancement Foundation, Malaysia.

He has more than 34 years of research experiences in natural products and medicinal chemistry and pharmacological activities of natural products. His research interests are identification of natural bioactive compounds, their derivatives and analogues as chemical leads for specific therapeutic efficacy (cardiovascular protective, immunomodulatory, anti-inflammatory, PAF antagonist & antimicrobial activities) leading to the development of new drug candidates against complex and challenging drug targets prior to clinical trials, and herbal research to develop high quality, safe and effective herbal products.



Prof. Jae Hoon Cheong



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Jae Hoon Cheong obtained his bachelor in pharmacy from Sahmyook University, while his M.S. and Ph.D in pharmacology were obtained from College of Pharmacy, Seoul National University. Dr. Cheong conducted a postdoctoral program in neurotoxicology at Kennedy Krieger Institute in Johns Hopkins University Baltimore, USA under supervision of Dr. Bressler. His area expertise is neuropharmacology, with hundreds of publications in various reputable international journal.

Dr. Cheong joined the University of Sahmyook in 1996 as the lecturer. He was then elected as the Director of Academic Affair in 2003, the Director of Eumyung Institute in Sahmyook University in 2007, and as the Dean of College of Pharmacy, Sahmyook University, in 2012. Since 2021 he is serving as the Professor in College of Pharmacy, Jeonbuk University, Korea.

Dr. Cheong also dedicated himself as the Vice president of Korean Society of Food, Drug and Cosmetics Regulatory Science in 2011-2016 and as the President of Korean Society of Applied Pharmacology in 2015. Since 2019, he has serving as the Director of Educational Center in Korean Association Against Drug Abuse. He is also the Chair of Committee for Supporting Education in KAPE since 2020, and the Vice President of Pharmaceutical Society of Korea since 2021.



Prof. Kari L. Franson, PharmD, PhD, BCPP



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Dr. Franson joined the University of Southern California in 2020 as Professor of Clinical Pharmacy. Dr. Franson is an educator with more than 25 years of experience in institutions around the world with expertise in campus and distance-based curricular innovation, interprofessional practice / education, technology-enhanced assessment / learning, experiential education, and healthcare workforce development to serve societal needs. As a U.S. Board-Certified Psychiatric Pharmacist and Dutch-Certified Clinical Pharmacologist she has guided national and international professional, legislative, media and commercial groups on cannabinoid clinical pharmacologic effects and cannabis user safety. Now she is the Associate Dean for Academic and Student Affairs.



Li-Jiuan (Rita) Shen, Ph.D.



6th AASP 2021

Dr. Shen received her B.S. and M.S. degrees in pharmacy from School of Pharmacy, National Taiwan University (NTUSP) in 1993 and 1995, respectively. She was awarded the scholarship for the doctoral education from Taiwan Bureau of Education during 2000-2004 and obtained her Ph.D. degree under the instruction by Professor Wei-Chiang Shen in Pharmaceutical Sciences at the University of Southern California (USC), LA, California, U.S.A., in 2004. She then worked as a senior scientist at Pfizer Pharmaceutical Company, La Jolla, California, U.S.A. Subsequently, she served an Assistant Professor, Associate Professor, and Professor at NTUSP in 2005, 2011, and 2016, respectively.

Dr. Shen devoted herself into pharmacy education, pharmacy practice, and research of clinical pharmacy and pharmaceuticals. In pharmacy education, she contributed to the implementation of the first 6-year Pharm.D. program in Taiwan since 2009. She helped to initiate the overseas training programs for students and pharmacists as well.

She was awarded several outstanding teaching awards from the university and the hospital. In pharmacy practice, she helped in the reimbursement of pharmaceutical care in Taiwan's national health insurance since 2019. Her current research is focused in 2 major areas: clinical pharmacy by using health big data analysis, and protein drug delivery by using a specific transmembrane peptide named as HBHAc. HBHAc has been applied in a variety of therapeutic proteins, such as recombinant arginine deiminase, erythropoietin, etc., *in vitro* and *in vivo* models. More than 80 papers have been published in the last decade.

Since 2017, Dr. Shen has been appointed as the Dean at NTUSP, Taiwan, leading the first endowment Project LEAPNTU at NTUSP for becoming one of the well-known pharmacy schools in the world. It is her privilege to be entrusted with the deanship.



Professor Ralph J. Altieri PhD



6th AASP 2021

Professor Ralph J. Altieri is Dean of the University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences in the USA. His academic career began as a scientist/researcher and educator and served as Associate Dean for Academic Affairs prior to his appointment as CEO Dean in December 2006. Within FIP, he has served in leadership roles as President of the Academic Pharmacy Section (now immediate past president), member of the FIP Congress Program Committee, AIM advisory committee and Global Academic Leaders Fellows Program Task Force. He currently serves as Director of the FIP UNESCO UNITWIN program and its Center for Excellence in Africa and was appointed as Chairperson of FIP Education by the FIP Council in September 2020.



Yolanda R. Robles, BS Pharm, M. Pharm, PhD



6th AASP 2021

Dr. Yolanda R. Robles is the Immediate Past President of the Philippine Pharmacists Association (PPhA) and had served the organization for the last 14 years in various capacities. She received her baccalaureate pharmacy education from the University of the Philippines and her master's and PhD in Pharmacy degrees from the University of Tasmania in Australia. She served as the Dean of the University of the Philippines College of Pharmacy for two terms (2001-2007) and is a former President of the Philippine Association of the Colleges of Pharmacy (PACOP) where she spearheaded curricular reforms. She was the Chair of the Commission on Higher Education Technical Committee for Pharmacy Education in 2007. She is currently occupying full Professor position in UP College of Pharmacy and is serving the Asian region in her capacity as President of the Federation of Asian Pharmaceutical Associations (FAPA). Previously, she was the President of two regional pharmacy associations – the Asian Association of Schools of Pharmacy (AASP) and the Asian Conference on Clinical Pharmacy (ACCP). Dr. Robles' research contributions are in the areas of health policy, pharmacy practice and education and has several local and international publications.

As President of PPhA, she had led the creation of pharmacy advocacy groups in various health areas including rational use of medicines, immunization, mental health, drug information services, wellness and medication adherence, among others. This, she prioritized to support the implementation of the new Pharmacy Law (R.A. 10918) in 2016. In addition to her university work, she had developed numerous Continuing Professional Development materials for pharmacy practitioners and pharmacy support workforce. Through the years, she provided technical support to the government through the Department of Health committee work involving medicines such as the National Formulary Committee, National Antibiotic Guidelines Committee, Antimicrobial Stewardship Steering Committee, National Mental Health Technical Working Group and DOH Advisory Council. For her accomplishments, she had received significant international and national awards such as the FAPA Ishidate Award in Pharmacy Education in 2008, the University of the Philippines Manila Centennial Excellence Award in Education, the Professional Regulation Commission Outstanding Professional in Pharmacy Award in 2016 and this June 2021, the University of the Philippines Pharmacy Alumni Association Lifetime Achievement Award.



Prof. Younghwa Na, Ph.D



6th AASP 2021

Younghwa Na graduated from College of Pharmacy Yeungnam University for his bachelor and MS degrees. He obtained the Ph.D degree from University of Houston, USA in 2000. Dr. Younghwa Na conducted postdoctoral research at Universitas Arizona during 2001-2002.

Dr. Younghwa Na was faculty member of Daegu Catholic University before moving to CHA University in 2011. Prof. Younghwa Na has research interest in development of skin whitening agents with inhibition of melanin biosynthesis, development of anticancer drugs targeting topoisomerase, CK2 inhibitor development, and synthesis of chalcone derivatives and study of its bioactivity. He is now the Dean of College of Pharmacy, CHA University, and General Manager for Education Support (Korean Association of Pharmacy Education).



Prof. Jingyu Yang, Ph.D



6th AASP 2021

Prof. Yang received her Ph. D in 2000 from Shenyang Pharmaceutical University. She is currently a professor, director of Department of Clinical Pharmacy, as well as chair of Department of pharmacology in Shenyang Pharmaceutical University, China.

Prof. Yang's research interests include neuropharmacology, tumor pharmacology, and clinical pharmacy. She published more than 100 research papers in well-known journals, including *Nature Nanotechnology* (2016, IF 39.213), *Autophagy* (2019, IF 16.016), *Pharmacology & Therapeutics* (2014 & 2021, IF 12.21), *Stroke* (2021, IF 7.917). Prof. Yang is one of directors of Chinese Pharmacology Society (APS) and the member of Asian Association of School of Pharmacy (AASP).



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BIOGRAPHY OF INVITED SPEAKERS



Chanuttha Ploylearmsang, Ph.D



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Chanuttha Ploylearmsang was born on September 8th, 1972, in ChiangMai, Thailand. She earned her Bachelor of Pharmacy from Faculty of Pharmacy, Chiang Mai University Thailand in 1995. She received the Master of Public Health in 1999 from Faculty of Graduate studies, Chiang Mai University. She obtained her Ph.D from Faculty of Pharmacy, Mahidol University in 2003.

She has been teaching since 2003 at Faculty of Pharmacy, Mahasarakham University. Her major research is pharmacy education, pharmacoconomics, pharmacoepidemiology, post marketing surveillance, and health promotions.

Dr. Chanuttha has served as the Dean of Faculty of Pharmacy, Mahasarakham University since 2017. She was actively member of several working committee nationally and globally, such as working committee for drafting policies and strategic plans of national drug system development (2012-2016), working committee for development of rational drug use instrument in specific population (Elderly), Food and Drug Administration (FDA) (2014-2015), expert in key performance indicator of primary care pharmacy instrument assessment, National Health Security Office 2016, sub-committee for Interprofessional Education, the National Health Professional Education Foundation, Thailand (2012-present), and sub-committee for development of primary care pharmacy, Pharmacy Council, Thailand (2017-present).



Prof. DR.rer.nat. Triana Hertiani



6th AASP 2021

Prof. DR.rer.nat. Triana Hertiani is a lecturer at the Pharmaceutical Biology Department, Faculty of Pharmacy, Universitas Gadjah Mada, Indonesia. Starting from 2016, Dr. Triana serves as the Vice Dean for Academic and Student Affairs at Faculty of Pharmacy Universitas Gadjah Mada (UGM), Indonesia. Before the appointment, she was Head of the Department of Pharmaceutical Biology and Director of the Master Program in Pharmaceutical Sciences at the same faculty.

Dr. Triana graduated as pharmacist at 1997 and as Master of Science at 2000 from the Faculty of Pharmacy, Universitas Gadjah Mada. She completed her Doctoral degree with great honor at the Pharmaceutical Biology and Biotechnology Department, University of Heinrich Heine, Duesseldorf, Germany at 2007.

Triana Hertiani began her career as a lecturer at the Pharmaceutical Biology Department, Faculty of Pharmacy, Universitas Gadjah Mada since 1998 and in recent time serves also as a researcher at the Centre for Anti-infective Research at the same institution. Her research interest is to explore Indonesian natural resources as new anti-infective and to provide scientific support for establishing Jamu as Indonesian traditional medicine.



Prof. Dr. apt. Umi Athiyah, M.S.



6th AASP 2021

Prof. Umi Athiyah was born in Probolinggo, April 7th, 1956. She obtained the master's degree from Airlangga university in 1987 and received her doctoral degree in 2007.

Her research activities focus on the field of community pharmacy, pharmaceutical care, and pharmaceutical management as can be seen in several articles published in National and International journals.

She is very concerned about the development of the pharmacy curriculum in Indonesia. She is a frequent speaker of various seminars and workshops, especially in the field of pharmaceutical care, clinical pharmacy, and training related to the development of pharmacist performance in the community.

She has been working as a lecturer at the Faculty of Pharmacy of Airlangga University since 1981. She is currently serving as a member of the National Pharmacy Commission (KFN) and Head of the Education Development Division at the Association of Higher Education in Pharmacy (APTFI), which focuses on compiling the pharmaceutical education curriculum in Indonesia.



Prof. Yahdiana Harahap



6th AASP 2021

Yahdiana Harahap has completed her Ph.D from Department of Pharmacy, Institute Technology Bandung, Indonesia. Her expertise is Pharmaceutical Chemistry especially Bioanalysis related to Bioavailability/Bioequivalence Studies, Therapeutic Drug Monitoring, and Carcinogenic of DNA-Adduct. Now she is the Dean of Faculty of Pharmacy, Indonesia Defense University and Head of Bioavailability and Bioequivalence Laboratory Faculty of Pharmacy, Universitas Indonesia. Prior to this position, she was the Dean of Faculty of Pharmacy, Universitas Indonesia. Besides the academic position, she is also active in scientific organizations, such as Asian Federation of Pharmaceutical Sciences and since 2020 assigned as President. As researcher, she has published 91 papers published in international journals with Scopus Index. She has been invited to be the speakers in many international conferences, especially in the field of Bioequivalence Studies and Bioanalysis technique. She is also got a lot of awards, among them is The Ishidate Awardee from Federation of Asian Pharmaceutical Association in the field of Pharmacy Education, 2016 in Bangkok. Since 2020 she becomes The Associate Editor in Pharmacy Education Editorial Panel, International Pharmaceutical Federation (FIP). She currently serves as The Narcotics Law Drafting Team at Ministry of Health Republic of Indonesia and National Agency of Drug and Food Control (NADFC), especially in Bioequivalence Studies evaluation.



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“Current education in medicinal chemistry in Japan: toward the integration of basic and clinical science”

PL002

Prof. Hisakazu Ohtani, Ph.D. (Faculty of Pharmacy, Keio Univ, Japan)

“Unique perspectives of pharmacy education in Japan - core curriculum and advanced education”

PL003

Prof. Ibrahim Jantan (Institute of Systems Biology (INBIOSIS), Universiti Kebangsaan Malaysia (UKM), Malaysia)

“Transformation in pharmacy education in Malaysia”

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Prof. Jae Hoon Cheong (School of Pharmacy, Jeonbuk National University, Republic of Korea)

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“Key elements of a successful interprofessional practice & education (IPE) program”

PL006

Prof. Li-Jiuan Shen (School of Pharmacy, NTU, Taiwan)

“Pharmacy school core curriculum in Taiwan”

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PL009

Prof. Younghwa Na (College of Pharmacy, CHA University, Republic of Korea)

“Pharmacy school education system and license test in Korea”

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“High-level pharmacist cultivation focusing on the professional competence- a pharmacist-physician collaborative training mode”



Code PL001

Current education in medicinal chemistry in Japan: Toward the integration of basic and clinical science

Hideyo Takahashi

Tokyo University of Science

ABSTRACT

In 2006, a historic reform in pharmacy education was undertaken in Japan. Universities established a six-year education program that integrates pre-pharmacy, basic pharmacy, and specialized pharmacy courses, with rotations in hospitals and pharmacies. The goal of the six-year program is to develop pharmacists who are well-versed in science, arts, and humanities. This reform was based on the reflection that the previous four-year pharmacy education programs placed the major emphasis on drugs and related chemicals, and it was thought that knowledge of basic science and medical science and technology alone was unable to develop pharmacists into medical professionals providing high-quality healthcare focused on patient safety and comfort.

In 2021, pharmacists educated in the six-year program are expected to make great contributions to advances in healthcare and support systems to meet the needs of the new era. Graduates will be active participants in team-based and community-based healthcare. However, there are worries that they might lack sufficient knowledge of basic science, which should be their main strength. Was the swing of the educational pendulum too great for clinical pharmacy? Is it possible to develop talented pharmacists without laboratory work and thesis research?

In this lecture, I suggest the integration of basic science and clinical science. A progressive approach taken in our faculty and in my lab will be presented. I believe that integrating part of the classical four-year program into the new six-year pharmacy education system will contribute to success in the future.



Code PL002

Unique Perspectives of Pharmacy Education in Japan - Core Curriculum and Advanced Education

Hisakazu Ohtani

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ABSTRACT

In Japan, until 2005 we had a single course for pharmacy education. In 2006, we introduced a dual-course system consisting of (i) a 6-year pharmacy course for the students who wish to obtain pharmacist license and (ii) 4-year pharmaceutical sciences (pharma-sci) course for the students who wish to work in a research field. Both 6-year and 4-year courses accept students who finished high school education and receive a bachelor's degree. In Japan, the majority of pharmacy education is provided by private universities, which mainly accept 6-year-course students. The curriculum for the 6-year course should follow the national guideline, namely the Model Core Curriculum for Pharmacy Education in Japan (revised in 2013). The core curriculum is designed to constitute 70% of pharmacy education in pharmacy school while the rest 30% consists of programs unique to each pharmacy school. Keio University also has unique programs out of the core curriculum. In the 4th year, students need to pass the Pharmaceutical Common Achievement Test consisting of CBT (computer-based testing) and OSCE (objective structured clinical examination). Clinical rotation consists of two 11-weeks slots (one hospital and one community pharmacy rotations). Every seven years, pharmacy school (6-year course) needs to pass a third-party evaluation, which is carried out by the Japan Accreditation Board for Pharmaceutical Education. On the other hand, the 4-year course is not constrained by the core curriculum and designed more flexibly. The Graduate school of pharmacy provides both a master course (2 years) and PhD course (3 years after master's degree or 4 years after the graduation of a 6-year pharmacy course). The number of pharmacy schools is recently increasing year by year and an issue has been raised regarding the imbalance between supply and demand of pharmacists in the future. In my presentation, I will summarize the overall perspectives of pharmacy education in Japan with some statistics as well as some advanced and out-of-core classes in Keio University Faculty of Pharmacy. I will also refer to the current issue and future perspectives of pharmaceutical education in Japan.



Code PL 003

Transformation in pharmacy education in Malaysia

Ibrahim Jantan

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ABSTRACT

Pharmacy education provides the relevant knowledge and skills for pharmacists so that they are competent to carry out their different roles and levels of practice. Pharmacy education focuses on laying a strong foundation in pharmaceutical sciences and pharmacy practice to enable the graduates readily apply these fundamental principles in their future development in community practice, hospital service, healthcare business, pharmaceutical industry and research. Pharmacy education is dictated by changes in pharmacy practice, pharmaceutical sciences, national health policy, pharmaceutical economics and to fulfil other national needs. The evolving role of pharmacists and the dynamic changes in pharmacy profession require transformation in pharmacy education. In Malaysia, pharmacists are increasingly involved in patient care monitoring and consultation with other members of the healthcare team on drug decisions and patient management. Pharmaceutical care has been adopted in the practice of pharmacy, which demands increased knowledge and greater communication and experiential skills. The advancement of the profession is strongly dependent on robust and contemporary educational programs for initial and continuing education. Pharmacy schools in Malaysia need to provide quality education and engage in a social accountable manner to serve the individual patients and the society as a whole. There has to be alignment between outcomes of pharmacy and pharmaceutical education and the overall health needs of the nation. Transformation in pharmacy education in Malaysia is necessary to sustainably expand and reform education and training to increase the quantity, improve the quality and relevance of pharmacists, and strengthen the country's health systems and improve population health outcomes.



Code PL 004

Establishment of the curriculum for 6 year pharmaceutical education – Based on the Delphi survey with Korean Pharmacy experts

Jae Hoon Cheong

(School of Pharmacy, Jeonbuk National University)

ABSTRACT

Looking after 10 years, Korean Association of Pharmacy Education (KAPE) is preparing the future pharmacy education system such as the education content, curriculum and the operation system based on the core competencies. KAPE had established the mission-vision-core values for Korean pharmacy education in 2019. Types of talent are “A pharmacist devoting to prevent disease and optimize treatment; A leader realizing human-centered social values; A pharmaceutical researcher leading the Bio-pharmaceutical industry”. Detailed talents are Care-giver, Manager, Leader, Professional, Innovator and Scientist. Through these, the competencies had been set up to be cultivated via pharmacy education. In the Delphi survey with 51 experts participated, 15 core competencies (logical reasoning and pharmaceutical expertise, patient-centered service, safety awareness, management and administration, communication and cooperation, leadership, social contribution, respect for life, professional ethics, Innovative technology expertise, future technology utilization, research planning, and expertise sharing) and 44 detailed competencies including critical thinking were established. Education content and curriculum were set based on the set detailed competencies, and the subject-education content-detailed competencies were reviewed. The educational flow chart and the curriculum by year and semester were arranged by mapping work. Evidence-based curriculum to achieve the educational objectives and goals previously suggested by the Korean Pharmacy Education Council was presented through rational procedures and social science methods. Opinions were collected through the discussions with units and related organizations. We are looking forward to establishing the reasonable curriculum considering the proposed contents.



Code PL005

Key Elements of a Successful Interprofessional Practice & Education (IPE) Program

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Background

Interprofessional collaborative practice contributes to optimal patient care, reduces health system errors, and has the potential to reduce health care costs. A comprehensive IPE curriculum provides learners opportunities to develop and refine the knowledge, skills and behaviours necessary for collaborative practice [1].

Methods

A comprehensive IPE curriculum includes didactic courses [2], early interprofessional experiences, simulation based TeamSTEPPS® training [3], and collaborative clinical education opportunities [4]. Learners develop strategies for effective team communication, recognizing team member's roles and responsibilities, considering the values/ethics of high quality care, and contributing to effective teamwork.

Results

Students were able to gain the knowledge and skills taught and assessed in the IPE course. New interprofessional practice experiences were developed for pharmacy students to demonstrate their interprofessional skills. Almost without exception, IPE trained pharmacy students are able to gain the trust of other health care providers in clinical settings.

Conclusion

A comprehensive IPE curriculum with both didactic and experiential components can develop practitioners ready for collaborative practice.

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Code PL006

Pharmacy School Core Curriculum in Taiwan

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ABSTRACT

The hospital pharmacy practice services at National Taiwan University (NTU) hospital were established more than 120 years ago when the Japan government ruled Taiwan in the late 18th Century. NTU (NTUSP) was the first 4-year B.S. school of pharmacy established in 1953 after World War II. Compared to the other schools or colleges in the world, it is a relatively “young” school. Pharmacy education in Taiwan has been evolving to meet the demand and expectation from the society. To promote the clinical competency of all the pharmacists, National Taiwan University launched the first 6-year pharmacy education (Pharm.D.) program from 4-year B.S. program since 2009. After 10 years, 100% (9/9) schools extended their programs to at least 5 years, and 78% (7/9) schools have the 6-year Pharm.D. programs in Taiwan.

For the Pharm.D. program, in addition to the original core curriculum, we enforced the 23-credit pharmacotherapy courses; increased a 36-week advance pharmacy practice experiences (APPE), with at least 18 weeks in clinical practice setting in the hospital, and community pharmacy, drug companies, manufacturers, government agencies, and academia as elective; increased courses in pharmacoconomics, pharmacoepidemiology, clinical trial, research design, and regulatory science; and listed intermediate community pharmacy practice as mandatory.

Hopefully, with the evolution of pharmacy education, we can create the environment for the new generation to appreciate the role of pharmacists in pharmacy practice, to inspire them to be gatekeepers for the medication safety. Most importantly, we believe that all of us would become the critical power of the reform for pharmacy practice and pharmacy education in Taiwan, in Asia, and in the world.



Code PL007

Pharmacy Curricula and Interprofessional Education

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ABSTRACT

Curriculum development is a continuous process whether small changes on a regular basis to specific parts of the program, periodic revision of the program or perhaps a once in a generation transformation. Globally, there is a movement towards more clinically oriented pharmacy curricula that necessitates a different approach to education and additional areas of expertise on the part of the faculty or practitioners who help in delivering the program. Whatever change is being contemplated, it should adhere to three major components – a vision for the future, educational learning outcomes that prepare graduates for the present and the envisioned future and meeting the needs of your community, country or region, all of which require advocacy to reach that future goal.

Within this context lies interprofessional education (IPE) and training. Mounting evidence indicates that interprofessional practice (IPP) improves patient outcomes and benefits health systems. IPE provides the foundation upon which IPP can develop and reach its full potential to better serve the health and wellbeing of our societies and improve our health systems. The counterpart of IPE for science is interdisciplinary education and training (IDE) in which interdisciplinary team science is increasingly important to scientific breakthroughs for human health that equally shares the stage in improving healthcare.

For both curriculum development and IPE, case studies will illustrate approaches that can be taken to achieve these goals and selected resources provided that can help guide these changes in our educational programs.



Code PL008

Health Ethics and Leadership in Pharmacy as a Freshman Course for Pharmacy Students: A Formative Evaluation

Yolanda R. Robles, RPh, MPharm, PhD

College of Pharmacy, University of the Philippines Manila

ABSTRACT

In 2018, the revised 5-year Bachelor of Science in Pharmacy was implemented. One of the program outcomes is to produce graduates who can practice pharmacy in a professional, legal and ethical manner. A course on Health Ethics and Leadership in Pharmacy (Clinical Pharmacy 141) was offered on the first semester at the first-year level. In the course, the students were taught ethical theories and their application to public health, health research, clinical care, health organizations and systems, and global health. The learning methods employed online were lecture, interactive discussion, video presentation, literature review, games, debate, and case analysis, among others. A formative evaluation form was filled out by the students at the end of the course. This is in addition to the qualitative survey made by the faculty during the course.

Preliminary results showed the positive impact of the course on the ethical knowledge and attitude of the students. They described their experience with the course as positively affecting their personal application of ethics to day-to-day situations. Many of the students were looking forward to their actual encounter with patients and how they will care for them in an ethical manner. The full description of the results will be presented by the author.



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Code PL009

Pharmacy School Education System and License Test in Korea

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Pharmacy school education system had not been changed for several decades before introduction of 2+4 education system in 2011. Following the education system change, pharmacy license test system has also been changed the content since 2015. The key point of 2+4 system was expanding and intensifying of clinical pharmacy education, which improved the executive ability of pharmacy students in Korea. In 2022, we are ahead to introduction of 6 years education program at pharmacy school. In this talk, the history and contents of education system and license test of Korean pharmacy school will be explained.



Code PL010

High-level pharmacist cultivation focusing on the professional competence- A pharmacist-physician collaborative training mode

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ABSTRACT

Objective: Under the guidance of the concept of "Massive Health" in China, the function of hospital pharmacy is gradually transforming to offer high quality of pharmaceutical service rather than medicine supply nowadays. Pharmacists have been viewed as the specialists with the responsibility to carry out pharmaceutical service with the essential professional competences including deeply integrated knowledge system of medicine and pharmacy, sufficient abilities of clinical practice and thinking ways with innovative spirits. Demands of these talents bring a great challenge to the high education system in China: how to construct a suitable cultivation mode of high-level pharmacist with strong professional competence, distinctive subject characteristics, and continuous potential for professional development.

Results: Shenyang Pharmaceutical University is one of the earliest schools to conduct clinical pharmacy education in China. Currently, we have developed the integrated system of clinical pharmacy education including a five-year program for undergraduates and a master-doctoral multilevel training program for graduates. Focusing on cultivating high-level pharmacists with sufficient professional competence, we have tried to establish a "pharmacist-physician" collaborative training mode based on the university-hospital cooperation in education by innovating the core courses of clinical pharmacy, constructing the internship mode with both process management and end-point assessment, promoting the "student-oriented" teaching reform and the formative evaluation system based on the ability-achievement, as well as performing the scientific research on "solving the problems of medication therapeutic management". This pharmacist-physician collaborative training mode greatly improves the comprehensive quality, professional competence and development potential of the graduates majoring in clinical pharmacy of Shenyang Pharmaceutical University. Approximately 40-50% of graduates can continue their career as clinical pharmacists in the top AAA hospitals, and another 30% of graduates can seek their career development in Clinical Research Organization (CRO) companies which mainly focus on clinical trials. Graduates showed the active and open thinking, and achieved various awards in the domestic or international academic conferences in the past five years. They have also published more than 60 academic papers, in which 28 papers indexed by SCI. Over 20 students participated in international short-term exchange projects.

Conclusions: Focus on building professional competences, we have established a talent cultivation mode to train the high-level pharmacists with emphasis on the integrated knowledge system of medicine and pharmacy, practical abilities and innovative thinking, guided by "pharmacist-physician" collaboration based on the university-hospital cooperation in education. It is a meaningful exploration by providing a novel pharmacist training mode to postgraduate education of clinical pharmacy in China.



List of Invited Speakers

IL001

Home-based care Interprofessional Education in Thailand

Dr. Chanuttha Ploylearmsang (*Faculty of Pharmacy, Mahasarakham University (MSU), Thailand*)

IL002

Experiences in Conducting IPE Clinical Pharmacy

Prof. Umi Athiyah and Budi Suprpti (*Faculty of Pharmacy, Universitas Airlangga, Indonesia*)

IL003

Bioanalysis : Connecting Pharmaceutical Sciences and Clinical Pharmacy

Prof. Yahdiana Harahap (*Faculty of Pharmacy Universitas Indonesia, Indonesia*)

IL004

Experiences in Conducting IPE Clinical Pharmacy

Prof. Triana Hertiani and Prof. Agung Endro Nugroho (*Faculty of Pharmacy Universitas Gadjah Mada, Indonesia*)



Code IL001

Home-based care Interprofessional Education in Thailand

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ABSTRACT

The main goal of Interprofessional Education (IPE) in MSU is to develop students' knowledge, skills and attitudes in inter-professional teamwork and home-based care competence. Students from six disciplines in MSU were supported to understand other professionals, to respect each other, to reflect a team with constructive viewpoint and to set patient care goals with humanized care.

From the lessons that were learned about the achievement of relevant outcomes, a six-step process of IPE implementation was created¹. 1) understanding of institutional philosophy and values which are the contribution to society and community or community-minded; 2) demonstrating shared experience, and building understanding of the IPE concept; home-based care with family medicine concept and INHOMESSS guide is used as our collaborative IPE concept 3) identifying natural leaders; they are three lecturers who have experience on collaborative home modification research together²; a rehabilitation physician, a pharmacist and an architect 4) setting up an IPE working group from six faculties including 9 lecturers from medicine, pharmacy, nursing, informatics, architecture and engineering; 5) planning and preparing three groups; teachers, students, and community. Teachers are informed about IPE principle, outcomes assessment and timeline of all IPE activities. Students are divided into a 7 or 8-person group and given a knowledge package of home-based care concept including INHOMESSS, appropriate medication use and storage in house, how to approach patient and family, how to communicate in team and with patient effectively, Universal Design (UD) and house modification for each patient, and the safety of electric equipment in the house. Fifty houses of patients and Primary Care Unit (PCU) officials in a selected community are informed about IPE objectives and home visits given by a group of IPE students. 6) continuing to learn and share together through the focus group discussion among the working group, the community representatives, and students by using the after action review (AAR) technique.

Students showed a significant increase in attitude on inter-professional teamwork, and passed the standard level of home-based care skills. They could have applied knowledge to create and plan the patient care goal together with a humanized perspective. Patient and community representatives also were satisfied in IPE students' home care behaviors³.

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Code IL002

Experiences in conducting IPE Clinical Pharmacy

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ABSTRACT

Health worker is a wholly inclusive term which refers to all people engaged in actions whose primary intent is to enhance health, including those who promote and preserve health, those who diagnose and treat disease, health management and support workers, professionals with discrete/unique areas of competence, whether regulated or non-regulated, conventional or complementary. Three competencies are needed: common competencies, individual professional competencies and Interprofessional collaboration competencies. To achieve these competencies must be conducted through Interprofessional Education that enables effective collaborative practice which in turn optimizes health services, strengthens health systems and improves health outcomes.

A Framework for Interprofessional Education (IPE) in Health Programs required a clear role about team function, collaborative leadership and conflict resolution. Pharmacists as a health care team have a role in providing a comprehensive range of services with the aim of ensuring safe use, effective and economical use of medicines. In order to prepare pharmacist graduate as a first professional degree, clerkship in ward pharmacy as a learning strategy is highly recommended. Following learning IPE at Ward Pharmacy, students become more motivated to practice and able to improve various case studies which are very valuable learning experiences for students' practice.



Code IL003

Bioanalysis: Connecting Pharmaceutical Sciences and Clinical Pharmacy

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ABSTRACT

The pharmaceutical sciences combine a broad range of scientific disciplines including pharmaceutical analysis. Bioanalysis is a sub-discipline of pharmaceutical analysis covering the quantitative measurement of xenobiotic (drugs and their metabolites, and biological molecules) and biotics (macromolecules, proteins, DNA, large molecule drugs, metabolites) in biological systems. The focus of bioanalysis in the pharmaceutical industry is to provide a quantitative measure of the active drug and/or its metabolites for the purpose of pharmacokinetics, toxicokinetics, bioequivalence studies, and exposure-response (pharmacokinetics / pharmacodynamics studies). While in the clinical pharmacy there is therapeutic drug monitoring which is to ensure that the therapy given is already appropriate that increases the quality life of the patient through bioanalysis (determination of analyte and metabolite level in biological matrix). Based on that, bioanalysis can bridge the pharmaceutical sciences with clinical pharmacy. Some research had been done in collaboration with hospitals for therapeutic drug monitoring such as tuberculosis and cancer therapy.

Keywords: bioanalysis, clinical pharmacy, pharmaceutical sciences, therapeutic drug monitoring



Code IL004

Interprofessional Education in Herbal Medicine Teaching and Learning: Sharing experience from implementation in UGM, Faculty of Pharmacy

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ABSTRACT

Indonesia is rich in biodiversity and culture which offers its high potential as a source for bioactive natural products and the development of traditional medicines along with the conventional one. The aforementioned fact has driven the necessity of integrating traditional medicine to enrich the curricula of the pharmacy study program. There are several approaches used to integrate the respective topic into teaching and learning activities through elective and mandatory courses. We believe that traditional medicine development needs an interdisciplinary setting, therefore a model of interprofessional education (IPE) is relevant to be implemented for nurturing students' ability to work as a team with other professionals. This report will describe the IPE models implemented in herbal medicine teaching and learning activity in the Bachelor of Pharmacy study program, UGM.

Inter-professional education is a pedagogical approach for preparing students of health science study programs to work collaboratively as a team. In UGM, its implementation in the health cluster has been limited by different academic scheduling systems utilized amongst study programs. i.e., block system and semester system. Therefore, in UGM the IPE is translated in a slightly different model.

Traditional medicine teaching and learning (T&L) in the Faculty of Pharmacy, UGM, is designed as an interdisciplinary approach by several schemes as follows, (1) a thematic KKN ("Kuliah Kerja Nyata"), a mandatory course with specific (elective) theme which may be related to traditional medicine (4 CSU); (2) Summer course/Winter course on IPE amongst health science cluster in UGM (3 CSU); (3) Summer course on Traditional Medicine (2 CSU); and (4) a Pharmaceutical Elective Package (7 CSU). The first one was performed in a group of students from different study programs in UGM working directly in the community (mainly in rural areas). The second and third ones are electives and can be transferred to elective courses in the students' academic transcript with limited seats available. The fourth one is an elective in the curriculum to prepare student's early exposure to the workforce. This course offers a normal teaching and learning activity in class involving practitioners by using case-based and team-based project activities or internship programs. There are seven packages offered to students, and one of them is Traditional Medicine. This modified IPE for T&L in herbal medicine based on facts that pharmacy workplace covers pharmacy practice and pharmaceutical industry. Models implemented in UGM offers students more flexibility to choose what fits them best in learning herbal medicine.



List of oral presenters

Code	Presenter
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OP009	Dyah Aryani Perwitasari : Pharmacy Students' Perspective about COVID-19 Treatment
OP010	Azizah Vonna : Interprofessional Education program during COVID-19 Pandemic: Lesson Learnt from Pharmacy Student Perspective
OP012	Frances Lois U. Ngo : Evaluation of Factors that Affect Dispensing and Incompatibilities Course Standing of Students in a New Curriculum Offering
OP015	Hui-Yu Chung : The Status of Education for Integrative Medicine in Japanese Medical Universities
OP016	Bayu Eko Prasetyo : Learning Tool Development using Adobe Flash Player for Virtual Practical Laboratory in Pharmacy Field
OP017	Iswandi : The Determination of the Thiamin Hydrochloride on <i>Oryza Sativa L</i> and <i>Oryza Nivara</i> by Spectrophotometry UV-Vis in Surakarta
OP018	Marie Cicelie C. Ng : Student Professionalism in Pharmacy Curriculum
OP019	Amelia Lorensia : Health Education Strategy with Increasing Knowledge to Influence Motivation Toward Smoking Cessation



Code : OP006

Student View on Blended Learning During the Covid-19 Pandemic

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ABSTRACT

The COVID-19 pandemic has been going on for more than a year, and it is not sure when it will end. As one of the pharmaceutical study programs in Indonesia, the Pharmacy Study Program of Faculty of Medicine and Health Sciences Universitas Muhammadiyah Yogyakarta has a huge challenge to continue to carry out learning well for students. This quite formidable challenge is based on the responsibility of the study program to continue to produce graduates who are following their competence as pharmacy graduates. During the Covid-19 pandemic, where the Indonesian government imposed rules in the form of social restrictions between individuals, this poses a severe problem for face-to-face learning that has been carried out so far. Considering that the entire learning agenda must still be implemented, the Pharmacy Study Program of Faculty of Medicine and Health Sciences Universitas Muhammadiyah Yogyakarta applies blended learning, namely learning online and offline from April 2020. The types of online learning that are carried out are lectures and tutorials as well as several practical topics and practice of communication skills that are felt to be able to be achieved by using online models. Offline learning activities are carried out for laboratory teaching and communication skills that are deemed incompetent to achieve online. Online learning is carried out using the Ms-team platform, Zoom, G-meet, and UMY's official platform for online learning, namely MyKlass. While in offline learning, students are asked to make a statement of their ability to take offline learning that is approved by their parents. The students of the Pharmacy Study Program who agreed to take part in offline activities were 74.28%. In the implementation of offline learning activities, strict protocols are applied, namely wearing laboratory coats, gloves, masks, face shields and reducing mobility in the room, and maintaining a distance between individuals of about 1.5 m. Before conducting offline activities, students are ensured that they are not feverish, and have oxygen saturation above 95%. From evaluating student opinions through the G-form about the learning that has been carried out, students said that online learning was considered reasonable because the platform was easy to access, the scheduling was appropriate and the material could be delivered well by the lecturer or lecturer assistant. Furthermore, offline learning that has been implemented is also considered to be good because it is felt that the material is easy to understand with the offline model, the health protocol is implemented well, and the schedule can be passed well. For further expectations, when asked about the blended learning model when the covid-19 pandemic has not ended, 70.75% of the pharmacy students of the Faculty of Medicine and Health Sciences Universitas Muhammadiyah Yogyakarta agreed with blended learning. Keywords: blended learning, education, Covid-19 pandemic, pharmacy students



Code : OP009

Pharmacy Students' Perspective about COVID-19 Treatment

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ABSTRACT

In the pandemic era, all of the health workers have a significant role in providing the information related to the disease and its treatment. Due to the mobility limitation, social media is the easiest media to provide and get information. Pharmacy students are the potential facilitator to give community education about COVID-19 treatment. We evaluated the pharmacy students' knowledge of COVID-19 treatment, behavior, and attitude of providing the information about COVID-19 treatment, to understand their readiness in providing the information.

We provided the questionnaire to the 429 pharmacy students from three schools of pharmacy in Indonesia. The questionnaire about the knowledge of COVID-19 treatment, behavior, and attitude of providing the information on COVID-19 treatment met the validity and reliability criteria. We analyzed the students' perspective descriptively

We found that most of the students are in the earlier years and female. They found the information about COVID-19 from many sources of media including scientific articles and knew information about COVID-19 transmission around their life area. The students' knowledge about antiviral and plasma convalescence was good. They showed the positive behaviors which were related to the COVID-19 treatment information regarding to the antiviral and the provision of Vitamin C. The positive attitude were related to providing information about the use of avigan®, plasma convalescent, chloroquine, hydroxychloroquine, and immunomodulator.

Using the good knowledge about COVID-19 treatment, the positive behavior and attitude of providing information to the students, the community behavior and attitude will be improved. The high year students have a tendency for the good knowledge and positive behavior and attitude of providing the information.

*Publication process in : Journal of Education and Health Promotion



Code: OP010

Interprofessional Education Program During COVID-19 Pandemic: Lesson Learnt from Pharmacy Student Perspective

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ABSTRACT

Health professional programs need to implement Interprofessional Education (IPE) in their learning process to be able to prepare their students to build teams with other health professionals in a collaborative and effective manner. The implementation of IPE in the midst of a pandemic is a challenge for education providers. This study portrays the experience of pharmacy students when they carry out learning with the IPE concept. The results of this study can be used as material for evaluating the IPE program to be even better to achieve the desired main competencies, especially with online learning methods in this pandemic era.

We conducted a focus group discussion (FGD) with 12 seventh semester pharmacy students who undertook the IPE program through the Pharmaceutical Care course. The IPE program was attended by students from 2 other health study programs, namely third semester medical students and seventh semester nursing students. Students were divided into 15 groups, in which each group consists of students from 3 health study programs involved. Each group was assigned to identify problems that occur in the elderly population and offer solutions based on their respective professional competencies.

Three main topics related to interprofessional education were generated from focus group discussions; the division of roles, the atmosphere within the group, and pedagogies ability from the tutor. The disproportionate number of students of health professions and pandemic-related communication methods were two predominant barriers experienced by the pharmacy students.

Despite the negative experience and the communication challenges due to COVID-19 pandemic endured during the program, the students stated achieving the benefit while being involved in the IPE program.



Code: OP012

Evaluation of Factors that Affect Dispensing and Incompatibilities Course Standing of Students in a New Curriculum Offering

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ABSTRACT

Dispensing and Incompatibilities is a skills-based course. The curriculum has been designed such that pre-requisites and co-requisites of the course help equip the student with adequate knowledge in Pharmacology and Pharmaceutics to ensure students are able to achieve its course outcomes as provided in its syllabus. For BS Pharmacy students, major co-requisite courses are Medication Safety and IPPE in the Community Retail Setting. Because these courses are not offered in BS Pharmaceutical Sciences students, an additional lesson for an introduction to community pharmacy practice was provided during the course orientation of Dispensing and Incompatibilities. The objective of this analysis is to evaluate the factors that affect the grade of students for Dispensing and Incompatibilities.

Regression analysis was performed using the grades in the BS Pharmacy and BS Pharmaceutical Sciences curricula for the following subjects: Pharmacology 1 (Pharm 125), Pharmacology 2 (Pharm 126), and the laboratory component of Dispensing and Incompatibilities (Pharm 133). Grades in Pharmacology 1 and 2 were averaged. Students in the BS Pharmacy curriculum were then further identified for those who took Medication Safety (Clin Pharm 162) and IPPE in the Community Retail Setting (Clin Pharm 152). Grades in Pharmaceutics 1 (Pharm 130) were not collected as additional requirements have not yet been fulfilled by students due to the pandemic. In addition, the grades of students in their objective structured clinical examination (OSCE) were collected as an important outcome requirement in Dispensing and Incompatibilities. All courses were taken by students in AY 2020-2021.

Scores of students in their OSCE ($p = 0.000$) and major courses ($p = 0.045$) are predictors, while scores in Pharmacology are not statistically significant ($p = 0.574$) to estimate their grades in Dispensing and Incompatibilities. Furthermore, taking major courses in the BS Pharmacy curriculum increases the grade of students by 0.9388 while a 1-point increase in the OSCE score of students increases their grade for Pharm 133 by 0.2868 points.

Both the BS Pharmacy and BS Pharmaceutical Sciences curriculum are taking Dispensing and Incompatibilities with standardized materials for both faculty and students to minimize bias and variability in laboratory discussions and student performance. The analysis has shown that grades of students taking Dispensing and Incompatibilities are also influenced by factors outside the course offering. Specifically, students in the BS Pharmacy curriculum have an advantage of getting a higher grade due to the major courses that they take together with Pharm 133. Although efforts have been made to provide additional information at the start of the semester through a lecture on introduction to community pharmacy practice, knowledge of students in the BS Pharmaceutical Sciences curriculum is still limited. Efforts to reduce this



effect must be implemented to lessen the advantage of students in the BS Pharmacy curriculum or to level the competencies of all students taking the course.



Code: OP015

The status of education for Integrative Medicine in Japanese Medical Universities

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ABSTRACT

Integrative medicine is a coordinated approach that combines traditional, complementary, and alternative. By adding complementary and alternative medicines to Western medicine, the community can expect a reduction in medical costs. Doctors, healthcare professionals and pharmacists must have reliable information, and they can provide this information simple and consistently to patients and citizens who seek medical treatment. In 2012, the Ministry of Health, Labor and Welfare (MHLW) of Japan defined integrated medicine as "medical practice led by doctors, combined with the other specialties." To achieve that, the basics of comprehensive medical education should be provided in university medical schools and other medical universities. But the actual situation has never been investigated, and it has not been investigated except Kampo medicine, a Japanese traditional herbal medicine with roots in ancient Chinese medicine, in the medical and pharmaceutical schools. We investigated integrated medicine in the core curriculum model, and the integrated medical education in the syllabus of each university's medicine, dentistry, pharmacy, and nursing.

Method: In the model core curriculum for education in Japanese universities of medicine, dentistry, pharmacy, and nursing, terms of integrative medicines such as Kampo medicines, health food, massage, and aromatherapy were investigated and analyzed. Also, in the course syllabus of the schools of medicine, dentistry, pharmacy, and nursing at Japanese universities in the 2018 academic year, terms of integrative medicines were investigated and analyzed using the 2018 National Library Web Archive Project (WARP) of Japan.

Result: In the model-core curriculum for the school of medicine and dentistry, Kampo medicines was included. In that for the school of pharmacy, Kampo medicines and health food were included. And in that of the school of nursing, Kampo medicines and alternative medicines were included. The course syllabus of 65 medical schools among 85 schools could be collected, and 33% of which was included integrative medicine, 85% was included Kampo medicines, and 12% was included health food. The course syllabus of 25 dental schools among 29 schools could be collected, and of which 4% of which was included integrative medicine, 60% was included Kampo medicines. The course syllabus of 70 pharmaceutical schools among 75 schools could be collected, and of which 44% of which was included integrative medicine, 100% was included Kampo medicines and health food, and 21% was included aromatherapy. The course syllabus of 208 nursing schools among 277 schools could be collected, and of which 32% of which was included integrative medicine and Kampo medicines, 30% was included massage, 20% was included aromatherapy, 17% was included health food, and 12% was included yoga therapy.



Discussion: In this study, it was not to browse the syllabus of all universities, there are limitations in mastering the actual content of the lecture and the time of contact with integrative medicine. Even if the course syllabus is published online, there are some universities and courses that do not describe the detailed course content. Although it is not listed in the syllabus, it is possible to teach. Some integrative medicine subjects are implemented in the model core curriculum, however integrative medicine subjects are not showing in the syllabus of all schools, indicating a lack of educational progress. There is little integrative medicine education in the medical faculty other than Kampo medicine. Ideally, the doctor-led medical practice with other professions, but we did see it has not enough knowledge for that. We think that there is still a long way to go to achieve that.



Code: OP016

Learning Tool Development using Adobe Flash Player for Virtual Practical Laboratory in Pharmacy Field

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ABSTRACT

COVID-19 pandemic situation that has attacked since earlier 2020 causes alteration in all aspects including education activities. Learning activities in higher education, particularly in the field of science such as pharmacy which are full of lectures and practical performances with direct face to face actions, definitely encounter a difficult adaptation to the government policy for on-line learning. Preparation of the learning materials, lecturers and of course the technology utilization are very crucial in learning implementation to obtain the learning objectives. This study focused on the application of Adobe Flash Player in one practical subject of HPLC in the laboratory which was virtually conducted in the Faculty of Pharmacy, Universitas Sumatera Utara.

This study was conducted with several steps including analysis, design, development, implementation and evaluation. The research instrument used was in the questionnaire form. The practical implementation was conducted virtually with a small group of participants as the respondents and the experts using Google classroom as the learning platform. The evaluation of learning outcome was performed for the respondents with pre-test and post-test forms. The evaluation of learning tool development was done with the respondents and experts' participation. The results showed an increase in respondents' average score from 32.92 to 94.58 for pre-test and post-test grades, respectively. The evaluation result of the developed application gained 90.62 and 96% of very good category from respondents and the experts, respectively.

Based on these results, it can be concluded that a developed learning tool for a virtual laboratory is very suitable to be implemented as a learning tool in a laboratory particularly in the pharmacy field. Therefore, it can be further developed for other practical subjects.



Code: OP017

The Determination of the Thiamin Hydrochloride on *Oryza sativa* L and *Oryza nivara* by Spectrophotometry UV-Vis in Surakarta

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ABSTRACT

Rice is a staple food that is consumed by the citizens of the world, especially in Asia. Rice has a wide variety of varieties, one of them a white rice (*Oryza Sativa* L) and red rice (*Oryza ivara*). Rice has a wide range of vitamin one namely vitamin B1 (thiamin hydrochloride). Thiamine is a vitamin that is needed to induce appetite, helps the use of carbohydrates in the body and is instrumental in the nervous system. Thiamin cluster has a chromophore, so it can be read using its absorbance of UV-Vis spectrophotometry. This research aims to find out how the levels of thiamine hydrochloride on white rice and red rice and the difference in levels between white rice and red rice.

The determination of the levels of thiamine hydrochloride by using quantitative analysis, by way of determination of wavelength maximum, operating time, raw curve, and the determination of the levels of thiamine hydrochloride on the sample. Determination of the wavelength, the parent solution taken 2 mL, 50 mL measuring flask put in added encompasses ammonia 1, 2 mL, BTB 0.05% 2, 7 mL, and PVA 1% 0,7 mL add aquadest up to the mark with a boundary. The next assignment is the determination of the levels of thiamine in samples. Each sample taken as many as 10 mL filtrate into a 50 mL measuring flask, then added encompasses 4 mL, BTB ammonia .05% 0, 8 mL, 3 mL 1% PVA and add aquadest to mark the boundary.

The results obtained in this research is the maximum wavelength obtained 614.0 nm. The results of the operating time is stable on a 1 – 15 minutes is 0.618 ABS. white rice sample Rate is an average of 41.3%, SD 30.8 and the levels of red rice is an average of 2.6%, SD 1.3.



Code: OP018

Student Professionalism in Pharmacy Curriculum

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ABSTRACT

Professionalism encompasses demonstrating professional attributes, and its development among student pharmacists has been a challenge in the curriculum. This paper aimed to systematically evaluate literature highlighting professionalism in pharmacy education in both didactic and experiential curricula. Electronic databases such as EBSCO Medical, Emerald Insight, and ScienceDirect were utilized. 'Professionalism' AND 'pharmacy curriculum' AND 'pharmacy students' AND 'student pharmacists' were the search terms used. Only peer-reviewed research articles, quantitative and/or qualitative, focusing on professionalism and involved students from a baccalaureate or graduate pharmacy programs were included and reviewed. Findings revealed that professionalism, as an essential part of the educational outcomes and key elements in both didactic and experiential curricula, is enhanced through the engagement of students in authentic teaching-learning activities and interaction with healthcare practitioners such as simulation and feedback learning intervention, interprofessional pharmacy practice experiences, and involvement in professional meetings or events. With this, students can adopt a culture of professionalism that they can exhibit while actively participating in didactic and pharmacy practice experiences and thus, further lead to their development as future pharmacy professionals.



Code: OP019

Health Education Strategy with Increasing Knowledge to Influence Motivation Toward Smoking Cessation

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ABSTRACT

Cigarettes are one of the biggest causes of health problems globally because it causes the death of more than six people every year. In addition to causing health problems, cigarettes also affect economic conditions. Because of the loss in terms of health and economy, the smoking cessation program is the leading choice of treatment for smokers. Although many pharmaceutical products have been used to stop smoking, they can only make smokers stop temporarily. This is because the nicotine in cigarettes causes dependence. The purpose of the study was to develop a health education strategy by exploring the conditions of knowledge that could affect motivation to quit smoking.

This research method was based on phenomenological perspective with interpretive phenomenological analysis (IPA) on male young active smokers as students, which was carried out from April to July 2021. The collection of samples used snowball sampling and purposive sampling, which would be followed by descriptive analysis.

The study was conducted on 23 students. The results of the study discussed knowledge about the content of cigarettes, and all respondents knew nicotine as the content of cigarettes, although they did not know the detailed effects. In the dangerous domain of smoking, most of the participants knew the effect of smoking on the lungs but not on other organs. While the efforts that can be made in the smoking cessation program, many respondents do not know drug therapy (pharmacology), and think that smoking cessation can be done by stopping smoking independently or avoiding the environment. Therefore, the level of knowledge related to smoking cessation can provide consideration for therapeutic options tailored to individual conditions.



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Code: PP009

Synthesis of Natural and Non-natural Type Nitrogen-containing Heterocycles by Mimicking Generation Process of Constituents from *Mercurialis leiocarpa*

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ABSTRACT

Dye plants are used as dyes and are known to show several biological effects such as anticancer and anti-inflammatory effects. For example, Indigo naturalis known as natural blue dye was reported to exhibit anti-inflammatory effects on ulcerative colitis. Therefore, natural dyes and nitrogen-containing dimers, such as indole dimers, are important for medicines. Among natural dye, *Mercurialis leiocarpa* (Euphorbiaceae) is a perennial thriving in Asian forests and is known as one of the oldest dye plants. This plant had been used as a blue dye. Indeed, the cut and dried stems of this plant change deep blue. The aerial parts of *M. leiocarpa* have been reported to contain pyrroline dimer derivatives. These dimers are generated by dimerization, oxidation, and rearrangement from pyridinedione after cutting and drying. We have focused on nitrogen-containing dimers from *M. leiocarpa* for the development of innovative drug seeds. In the present study, we discuss the isolation of the new asymmetric pyrrole dimer, leiocarpanine A (**1**), from the aerial parts of *M. leiocarpa*. We present the chemical elucidation, the estimation of the generation process, the concise synthesis of **1**, and the synthesis of the derivatives of **1**, non-natural type nitrogen-containing heterocycles.

[Isolation of constituents from the aerial parts of *M. leiocarpa*]

New asymmetric pyrrole dimer, leiocarpanine A (**1**, 0.005% from dry aerial parts), together with four known nitrogen-containing compounds was isolated from the aerial parts of *M. leiocarpa* cultivated in the garden of medicinal plants, Kyoto Pharmaceutical University. The chemical structure of **1** were characterized by 1D and 2D NMR spectra and X-ray crystallographic analysis. Compound **1** with an asymmetric pyrrole dimer structure is a rare compound derived from a medicinal plant.

[Synthesis of natural and non-natural type nitrogen-containing heterocycles including **1**]

We tried to synthesize asymmetric pyrrole dimer **1** by mimicking the generation process. As the results, **1** was obtained from methoxy-1-methylpyridine-2,6-dione via intermediate hermidin, 3-methoxy-1-methyl-1*H*-pyrrole-2,5-dione, and cyanohermidin by oxidation, radical addition, and rearrangement. The reaction proceeded in a mixture without purification by column chromatography except for the final step, and **1** as racemic compound was obtained in 0.3% yield from methoxy-1-methylpyridine-2,6-dione. This synthesis may be useful for the construction of asymmetric nitrogen-containing dimers.



Code: PP010

Perceived Drug Information Skills among Student Pharmacists: A Cross-Sectional Study

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ABSTRACT

Pharmacists have active roles in ensuring the current best evidence in making decisions on patient care and medication use. Hence, an appropriate core set of skills in drug information is deemed crucial in pharmacy practice. This paper is a part of a two-pronged study on student pharmacists' drug information skills and aimed to determine how they perceived these skills while enrolled in the Clinical Pharmacy and Doctor of Pharmacy programs. Prior to the conduct of the study, the protocol was approved by the ethics research committee of the Faculty of Pharmacy. The details were explained to the respondents and after agreeing to voluntarily participate, they were asked to sign the consent sheet, profile form, and the 5-point Likert scale survey questionnaire on drug information skills. A total of 35 student pharmacists participated (16=Clinical Pharmacy; 19=Doctor of Pharmacy). The respondents strongly agreed that they consider the medication or medical history of the patient when responding to drug information needs (mean=4.81), gather additional background information (mean=4.78), and use appropriate references for specific types of questions (mean=4.78). Meanwhile, they agreed that they can follow up with the patients if the provided information was useful (mean=4.40) and provide new information regarding the drug information need when applicable (mean=4.35). The results of this paper can provide baseline data on how the students perceived their skills in addressing drug information inquiries. Thus, the development of these integral sets of skills is necessary for pharmacy practice when responding to actual healthcare needs and demands.



Code: PP011

Humanism Education for First Year Students at Kobe Gakuin University

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ABSTRACT

The importance of collaborative medical care in medicine has become preferred in Japan, with the declining birthrate and aging society. Pharmacists, as part of the collaboration alongside physicians and nurses, need to have the same knowledge of medical ethics. Japanese revised the model core curriculum for pharmacy education to include ten professional competencies for pharmacists, including professionalism that fulfill the legal, ethical, and professional responsibilities of pharmacists. This study will reflect on first-year pharmacy students and their understanding of humanism.

Twelve courses of lectures of humanism on each 90 minutes were dedicated to 245 first-year pharmacy students by two physicians during the period of October to December in 2019 at Kobe Gakuin University. Ten lectures were conducted as sit-down lectures, and two lectures were conducted using audio-visual technologies such as watching DVDs and hearing the recitation. After the 12 lectures were completed, there was a questionnaire for students.

Among the 12 lectures, the students' interest ranked as following : Introduction 1% reproductive health/rights 4%. Surrogate birth with DVD 19%, Declaration of Helsinki 6% prejudice and discrimination of Leprosy (Hansen's disease) 3% organ transplantation with brain death 13%, overwork death called Karoshi in Japanese 4%, Medical Assistance in Dying and Do not resuscitate order 18%, Takase boat written by Ogai Mori 11%, regenerative medicine 6%, drug harm in history (thalidomide, clioquinol, HIV contaminated blood) 6%, risk management in medicine 6%.

First year pharmacy students lack the knowledge of professionalism, therefore moral ethics in medicine can be difficult to understand and recognize. After the twelve lectures were completed, as a result, students expressed 10% more interest in lectures pertaining to organ transplantation and medical assistance in dying and do not resuscitate orders, surrogate birth, and 'Takase boat written by Ogai Mori'. Students were more interested in lectures that used audio and visual technology. Therefore, it will be important to use more audio and visual technology to provide realistic medical ethical lectures in the future.



Code: PP011A

Second Line-Injectable Induced Ototoxicity in Multidrug-Resistant Tuberculosis: A Scoping Review of The Indonesian Studies

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ABSTRACT

A wide variation in ototoxicity or hearing loss due to injectable antitubercular drugs in patients with MDR-TB has been reported globally and in Indonesia. This scoping review assesses the ototoxicity of second-line injectable antitubercular drugs in Indonesian patients with MDR-TB. Seven studies were identified based on the inclusion criteria reporting kanamycin and capreomycin in the management of MDR-TB. Ototoxicity was observed in 39.3% (116/295) MDR-TB patients. Ototoxicity was observed in kanamycin, 38.7% (105/271 patients); capreomycin, 36,8% (7/19 patients); and kanamycin plus capreomycin, 80% (4/5 patients). Only one study reported risk factors for ototoxicity in MDR-TB patients. Ototoxicity was significantly associated with older age, and the length of kanamycin therapy correlates with hearing loss. This review identified a high prevalence of ototoxicity in Indonesian patients with MDR-TB treated with second-line injectable antitubercular drugs. Efforts were urgently needed to develop guidelines for monitoring ototoxicity, improving pharmacist and clinician awareness, and educating patients or caregivers to report hearing loss symptoms as a sign of ototoxicity.



Code: PP012

First- and Second-Year Pharmacy Students' Perspectives on Online Learning during The Covid-19 Pandemic: a Cross-sectional Survey Study

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ABSTRACT

The worldwide were stunned by an infection with the coronavirus infection (COVID-19), also known as Severe Acute Respiratory Syndrome Coronavirus – 2 (SARS-CoV-2) at the end of 2019. The SARS-CoV-2 virus spread quickly to numerous additional nations, this prompting WHO to declare the situation a *Public Health Emergency of International Concern* (PHEIC) on January 30, 2020. The same thing happened in Indonesia, as COVID-19 cases kept on rising and spreading swiftly across the country. This epidemic has had a significant impact on many aspects of life, including the field of education. Many schools, from primary to university level, have switched from face-to-face to online instruction. The goal of this study is to assess first- and second-year pharmacy students' online learning.

A cross-sectional technique was used to conduct this questionnaire survey, which included three domains: preparedness, attitude, and barriers. Towards the end of the semester, questionnaires were delivered to first and second-year pharmacy students.

The questionnaire was completed by 52 first and second-year pharmacy students, 44 of whom were female and 8 of whom were male. The average preparedness score is 31.8 ± 4.89 (Maximum 45), the average attitude score is 34.5 ± 6 (maximum 55), and the average barriers score is 27 ± 4.9 (Maximum 45). According to the survey results, 71 percent of first- and second-year pharmacy students believe the faculty is prepared and capable of shifting face-to-face instruction to online learning during the COVID-19 pandemic. Furthermore, 62.7 percent of pharmacy students in the first and second levels had a good attitude toward online learning, according to the survey data. The data was not followed by student barriers, with up to 49 percent of students encountering difficulties when learning online.

In an emergency or epidemic like today's, online learning is both a difficulty and an opportunity. In comparison to campus infrastructure, online learning necessitates extensive skill training in the use of computers and the internet. As a result, colleges must be able to adapt their talents and capabilities to meet these demands.



Code: PP013

Preparation, Attitudes, and Challenges to Online Learning among Pharmacy Students at the Third and Fourth Levels

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ABSTRACT

In Indonesia, there are still many cases of Covid-19, which leads to the transfer of learning techniques from offline to online practices. For the third- and fourth-level students who have previously participated in offline learning, this condition requires an adaptation in learning methods. Therefore, in this study, a survey was conducted to determine the perception of pharmacy students towards online learning.

This study used a cross-sectional method to conduct a questionnaire survey with three domains: preparation, attitudes, and challenges. Each domain has several questions that represent the online class's preparations, attitudes, and challenges. Respondents were third and fourth-year Pharmacy Study Program, Faculty of Medicine, Hang Tuah University, Surabaya, students who completed the survey using a google form.

Fifty students completed the questionnaire, 43 of whom were female, seven of whom were male. Therefore, 30 ± 4.7 is the average value of preparedness (maximum value of 50). According to this finding, 68% of respondents believe the faculty has adequate preparation and the capacity to apply online learning. The average attitude rating is 34 ± 6.68 (maximum value 55), indicating that 61% of respondents had a favorable attitude toward online learning. The average challenge value is 28 ± 4.2 (maximum value 45). The data shows that 51% of respondents encounter difficulties in online classes, and 56% of respondents require online class training.

This survey is used to assess learning activities to help institutions improve the quality of their learning techniques. To overcome the challenges, institutions play a role in providing skills training to assist and educate students in online learning.



Code: PP013A

Perception about E-learning during the Pandemic among Pharmacy Students

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ABSTRACT

E-learning became the new method of teaching during the pandemic. A survey was designed to know the perception of this e-learning among pharmacy students by distributing an online questionnaire. Data from students were analyzed with statistical software.

About 109 students answered the questionnaire. According to students' answers, the advantages of e-learning were the ability to support governments' program (stay at home) for 57,80%, easy access for online materials (18,35%) and recording video (17,43%), learn according to their ability (4,59%) and of course comfortable environment (1,83%).

The majority of students chose lack of practice at laboratory (61,47%) and speed of internet (19,27%) as the main disadvantages of e-learning. However, from statistical analysis, there was no difference between face to face and e-learning in terms of opinions on the ability of the learning method to increase knowledge ($p=0,4936$), to increase skill laboratory ($p=0,5$), and to increase social knowledge such as interaction and communication ($p=0,5$).

A successful implementation of online learning requires a good strategy and more active variation.



Code: PP014

Biological activity of *Andrographis Paniculata* Extract

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ABSTRACT

Andrographis paniculata is an herbaceous plant in the family Acanthaceae, known commonly in Thailand as “Fah Tha Lai”. *A. paniculata* extracts were reported to have medicative activities, namely antiviral, antibacterial, and immunostimulatory activities. This study focused on the antioxidant activity of polyphenols extracted from *A. paniculata* as oxidative stress plays a vital role in developing and progressing many diseases, including cardiovascular diseases and cancer.

A. paniculata was extracted using a mixture solvent (ethyl alcohol: water in ratio 8:2). The total phenolic content of *A. paniculata* extract was determined using the Folin-Ciocalteu method and calculated as gallic acid equivalents (GAE). The antioxidant activity of *A. paniculata* extract was performed via 2, 2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging assay and ABTS radical scavenging capacity assays. The findings exhibited a strong correlation between antioxidant activity and the total phenol contents. In addition, DPPH and ABTS assays showed that *A. paniculata* extract showed antioxidant activities in a concentration-dependent manner. The EC₅₀ of *A. paniculata* extract from DPPH assay was 725 µg ± 0.850. Vitamin C was used as a positive control in DPPH assay, while Trolox was used as a positive control in ABTS assay.

To conclude, *A. paniculata* extract consists of a high amount of total phenolic content, which exhibits a significant antioxidant activity. However, further investigation regarding antioxidant activity such as SOD, ROS, and RNS scavenging assays and *in vivo* experiments should be performed.



Code: PA014

Undergraduate Pharmacy Student's Perception of E-learning During Pandemic COVID-19

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ABSTRACT

The COVID-19 pandemic that has occurred this year has affected almost all aspects of life, including education. Learning activities have switched to online methods since the COVID-19 pandemic. So, lectures continue to run, and students get the knowledge they should get. However, several educational institutions, lecturers, and students in developing countries like Indonesia do not experience online learning.

This study evaluates online learning activities in students of the Hang Tuah University undergraduate Pharmacy for one year. The data was obtained from the analysis of an online questionnaire filled out by 119 students.

The results showed that students were happy with online learning because it supported the stay-at-home program during the pandemic (58.8%) and easy access to lecture materials (18.5%). Meanwhile, the challenges faced by students during online learning were not being skilled at using laboratory equipment because there was no practicum during the pandemic (61.3%) and internet network difficulties (19.3%). The increase of knowledge during online learning is not much different from face-to-face learning; on the contrary online learning is less effective in improving laboratory skills. As many as 71.4% of students are satisfied with the online learning method implemented during the covid-19 pandemic, innovation is still needed to improve practicum courses' skills.



Code: PP015

Synthesis of Thiopyrans using Garlic-derived Unstable Compound Thioacrolein and Evaluation of Their Activity

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ABSTRACT

Thiopyran, which has a sulfur-containing 6-membered ring structure, is important as a partial structure of anticancer drugs, but its construction is known to be relatively difficult. On the other hand, allicin and (*Z*)-ajoene, which are the main components of garlic (*Allium sativum*), show anticancer activity. Although these compounds are useful as anticancer drugs, their chemical instability has been pointed out as a problem. In our laboratory, we are searching for anti-cancer drugs from natural products. In this study, we focused on the biosynthetic process of garlic components and planned the synthesis of stable thiopyran derivatives. In other words, the purpose was to synthesize a thiopyran derivative with anticancer activity using the unstable thioacrolein obtained from allicin, which is the main component of garlic.

As a method of synthesizing thiopyran, allicin obtained from garlic was an important precursor for the production of thioacrolein. Unstable thioacrolein was produced from allicin and its reaction with various silyl enol ethers was investigated. After examining the reagents and reaction conditions (equivalent of reagents, reaction time, solvent, temperature), we succeeded in regioselectively synthesizing thiopyran derivatives **1** and **2** in the reaction using Danishefsky's diene. In garlic, 2-vinyl-4*H*-1,3-dithiin is biosynthesized from thioacrolein. Using this process, **1** and **2** could be synthesized in the same yield as 2-vinyl-4*H*-1,3-dithiin. We also investigated the toxic effects on cancer stem cells (CSC) of **1** and **2** that underwent optical resolution. It was revealed that **1a** and **1b** have stronger effects than their diastereomers **2a** and **2b**. In addition, its action was equal to or better than that of the comparative drug (*Z*)-ajoene, and **1** was more stable than (*Z*)-ajoene to heating in DMSO-*d*₆.



Code: PP016

Inhibitory activity of α -glucosidase enzymes from binahong leaves (*Anredera Cordifolia* Ten.Steenis), brotowali stems (*Tinospora crispa* (L.), cherry leaves (*Muntingia calabura* L.) and their combinations

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ABSTRACT

Diabetes mellitus is a metabolic disorder characterized by hyperglycemia. Diabetes mellitus is a silent killer because patients often do not realize it, so many treatments should be done to control blood sugar in the body. One of the treatments was by natural medicine. Binahong (*Anredera Cordifolia* Ten.Steenis), brotowali (*Tinospora crispa* (L.) and cherry (*Muntingia calabura* L.) based on several studies are medicinal plants that can be used to lower blood sugar levels. This research examined the inhibitory activity of α -glucosidase enzymes of each extract and also the combination of extracts. In vitro experimental with the α -glycosidase enzyme inhibition method. The IC₅₀ value of each extract and its combination was determined, with acarbose used as a comparison. The results showed the inhibition of α -glucosidase activity in IC₅₀ value of binahong leaves, brotowali stem, and cherry leaves respectively were 26.13 g/mL, 29.12 g/mL and 35,080 g/mL. Acarbose is a standard showed IC₅₀ value at 47,093 g/mL. In the combination of binahong, brotowali, and cherry extracts, the highest percentage of inhibition was found in the ratio of binahong:brotowali (2:1). Extracts from binahong leaves, brotowali stems and cherry leaves have potential as α -glucosidase inhibitors in treating type 2 diabetes mellitus.



Code: PP016A

A Retrospective Surveillance Of The Prophylactic Antibiotics For Debridement Surgery In Burn Patients

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ABSTRACT

Burn injury is trauma with a high risk of infection. A method that can be used to prevent and decrease the incidence of infection and accelerate wound healing is debridement. The use of prophylactic antibiotics was considered in debridement to minimize surgical site infection. This study's objective was to characterize the usage of prophylactic antibiotics for debridement in burn patients, including the selection, dose, and route of administration. The second objective was to quantitatively calculate the use of prophylactic antibiotics using ATC/DDD. This was a retrospective study in burn patients admitted to Dr. Soetomo Hospital's burn unit between 2017 and 2020. Ninety burn patients meet the inclusion criteria enrolled in this study. There were eight prophylactic antibiotics for debridement in this study. Only four from eight antibiotics met the guidelines for prophylactic antibiotics before surgery. All prophylactic antibiotics were given intravenously. The most common prophylactic antibiotics were cefazolin (39%) and followed by ceftazidime (31%) and ceftriaxone (11%). Ceftazidime, cefoperazone, amikacin, and meropenem were used as therapeutic antibiotics to treat burn infection and continued as prophylactic before debridement surgery. Cefazolin and ceftriaxone were the most antibiotics that comply with their dose with the guideline. The total of DDD/100 operations was 6.23, and cefazolin was the highest consumed, 3.10 DDD/100 operations. The mortality rate in our study was 33%. There was a significant correlation between % TBSA and length of stay and debridement frequency for those who survived. Our study concluded there was a difference between daily practice in the hospital and in the guidelines. Improvements were needed to use prophylactic antibiotics more precisely regarding quantity and choice of the type of antibiotics.



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Inhibitory activity of α -glucosidase enzymes from binahong leaves (*Anredera Cordifolia* Ten.Steenis), brotowali stems (*Tinospora crispa* (L.)), cherry leaves (*Muntingia calabura* L.) and their combinations

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INTRODUCTION

Diabetes mellitus is metabolic disorders characterized by hyperglycemia. Diabetes mellitus is a silent killer because patients often do not realize it, so many treatments should be done to control blood sugar in the body. One of the treatment was by natural medicine. Binahong (*Anredera Cordifolia* Ten.Steenis), brotowali (*Tinospora crispa* (L.)) and cherry (*Muntingia calabura* L.) based on several studies are medicinal plants that can be used to lower blood sugar levels

METHODS

1 Preparation sample
Binahong, brotowali
and cherry

2 Extraction and
identification

3 Inhibitory activity
of α -glucosidase

RESULTS

Sample	IC ₅₀ \pm SD(μ g/mL)
Cherry leaves	26,63 \pm 1,15
Binahong leaves	35,07 \pm 2,35
Brotowali stem	29,42 \pm 1,40
Acarbose	47,093 \pm 6,26

CONCLUSION

Extracts from binahong leaves, brotowali stems, cherry leaves and their combination have potential as α -glucosidase inhibitors in treating type 2 diabetes mellitus

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