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International Symposium in Pharmaceutical Science and Technology

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Pharmaceutical science has significantly been developing, following recent findings, methods, computation, and instruments. The global pharmaceutical industry, which includes drug discovery, manufacturing as well as controlling its quality, efficacy, and safety, has experienced substantial changes during these years. Thus, to be able to develop the quality of drugs, pharmacists are expected to understand how discoveries in science and technology translate into business opportunities within the pharmaceutical industry.

International Seminar on Pharmaceutical Science and Technology is intended to cover the latest findings in pharmacy and medicines, including their related fields such as chemistry, physics, and biology. This seminar is also dedicated to promoting more specific fields, that are analysis of pharmaceuticals, cosmetics, and food, forensic and biomedical analysis, and pharmaceutical technology including drug compounding and dispensing. In this seminar we welcome scientists from academics and industries, while motivating young researchers and students, who have engaged themselves in related fields. There are thirteen speakers from all over the world, e.g., Spain, Germany, Austria, Japan, New Zealand, Malaysia, and Indonesia, and more than one hundred researchers participated as poster and oral presenters from Malaysia, India, and Indonesia. We hope that this international event will help us enhance and widen our knowledge and scientific network.

On behalf of the organizing committee, I would like to thank all invited speakers and contributed participants, who have willingly shared their researches and experiences. The committee also wants to thank the Directorate General of Higher Education, the Rector of Universitas Padjadjaran, the Dean of Faculty of Pharmacy Universitas Padjadjaran, the Dean of School of Pharmacy Bandung Institute of Technology, and all partners who have kindly supported this seminar. We wish everyone will enjoy the lectures, the food, and the beautiful scenery of our campus.

With kindest regards,

Juli Levita
Welcome Speech from
Dean of Faculty of Pharmacy Universitas Padjadjaran

Honorable Rektor Universitas Padjadjaran, Dean of School of Pharmacy of Bandung Institute of Technology

Distinguished guests, invited speakers, and all participants of the Workshop and International Seminar on Pharmaceutical Science and Technology 2014,

First of all, please allow me to extend my warmest welcome to you at the ISPST 2014 this day here at our Jatinangor campus. We are very proud to present this great event that facilitates findings in all pharmaceutical areas, including basic and applied sciences related to it.

Pharmaceutical science is a wide discipline discussing both analytical and manufacturing aspects, and has been rapidly growing since the last decades. Novel findings in drug discovery and its good manufacturing process to meet patient's compliance are needed to relieve the growth of new diseases, especially caused by resistant viruses and bacteria.

Based on the above, Faculty of Pharmacy of Universitas Padjadjaran collaborated with School of Pharmacy of ITB to organize this program. The workshop and the seminar are aimed to explore pharmaceutical sciences and application in the development of healthcare products. Through sharing and networking, ISPST 2014 will provide an opportunity for researchers, practitioners, and educators to exchange research evidence, practical experiences and innovative ideas on issues related to pharmaceutical sciences.

We realize that this event is only a small effort to contribute exchanges in researches and experiences, therefore more collaborative works and continuous relationship between researchers are still needed. We hope that this seminar will be a starting point for more joint-projects and other MoUs.

Last but not least, I would like to thank the organizing committee for all efforts and hardworking they have done to make this event successful. I wish all of the speakers and participants will have a good time in Jatinangor.

Regards,

Dr. Ahmad Muhtadi, M.S., Apt
Dean
Opening Remarks from
Rector of Universitas Padjadjaran

Distinguished guests, invited speakers, and all participants of the Workshop and International Seminar on Pharmaceutical Science and Technology 2014.

First of all, I would love to greet and welcome you at our Jatinangor campus. I feel very honoured that Universitas Padjadjaran in celebrating its 59th anniversary is hosting this great event that facilitates new findings in all pharmacy areas.

This seminar covers drug discovery and development, includes its manufacture and evaluations to meet the criteria of drug quality, efficacy and safety. We really hope that our university, especially Faculty of Pharmacy, can make significant contribution in the growth of new drugs.

I acknowledge the Faculty of Pharmacy of Universitas Padjadjaran that has succeeded in building collaborations with School of Pharmacy of ITB and University of Alcala as well as with an international journal to organize this program and won a prestigious grant from Directorate General of Higher Education. I hope that by sharing and networking, this seminar will provide a good opportunity for researchers to share their experiences and innovative ideas on issues related to pharmaceutical sciences.

Finally, I wish all speakers and participants will have a pleasant time in Jatinangor.

Regards,

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3. Rina Wartini, S.Si., Apt
4. Athina Mardatillah, S.Farm., Apt
### Scientific Programs and Schedule

#### WORKSHOP

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**Location**  
PPBS Computing Labs, Universitas Padjadjaran  
**Date**  
Tuesday, 16th September 2014

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Muhammad Yusuf, M.Si |
| 10.00 - 11.00 | Introduction to Molecular Dynamics  
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Dr. Sy Bing Choi  
Muhammad Yusuf, M.Si |
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| 12.00 - 13.00 | Lunch Break                                                               |
| 13.00 - 14.00 | Molecular Dynamics Simulation  
_SESSION I_  
Dr. Sy Bing Choi  
Muhammad Yusuf, M.Si |
| 14.00 - 15.00 | Molecular Dynamics Simulation  
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| 15.00 - 16.00 | Molecular Dynamics Simulation  
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Dr. Sy Bing Choi  
Muhammad Yusuf, M.Si |

**Second Day**  
**Location**  
PPBS Computing Labs, Universitas Padjadjaran  
**Date**  
Wednesday, 17th September 2014

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Sharon D Bryant, Ph.D |
| 16.00 - 16.30 | Closing                                                                  |

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*International Seminar on Pharmaceutical Science and Technology [ISPST 2014]*
# Scientific Programs and Schedule

## SEMINAR

**First Day**  
**Venue:** Rectorate Building Universitas Padjadjaran  
**Date:** Thursday, 18<sup>th</sup> September 2014

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| 09.30 – 10.00 | Coffee break and expo visit                                     |
| 10.00 – 11.00 | Keynote Speaker I: Prof. Federico Gago [Spain]  
Moderator: Prof. Dr. Danyono Hadi [Japan] |
| 11.00 – 12.00 | Keynote Speaker II: Prof. Hermann Urbaschek [Germany]  
Moderator: Dr. Keri Lestari |
| 12.00 – 13.00 | Lunch break, prayer, expo visit, poster session               |
| 13.00 – 14.00 | Keynote Speaker III: Drs. Rudi Rosman, MBA, Api  
[Director of PT. Kimia Farma Tbk. – Indonesia]  
Moderator: Prof. Dr. Moelyono MW |
| 14.00 – 15.00 | Plenary Session I:  
Assoc. Prof. Tomoya Usahara [Japan]  
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## Second Day

**Venue:** Rectorate Building Universitas Padjadjaran  
**Date:** Friday, 19<sup>th</sup> September 2014

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Moderator: Prof. Dr. Ana Subarnas |
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Robbi Anthony Sinha, Ph.D  
Zhou Jin, Ph.D  
Roni Leman Adi, MD, Ph.D  
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- Sharon D Bryant, Ph.D [Australia]
- Assoc. Prof. Dr. Min-Tze Liong [Malaysia]
- Prof. Dr. Habibah A Wahab [Malaysia]
- Moderator: Muchtaridi, Ph.D

### Plenary Session III:
- Wai Keat Yam, Ph.D [Malaysia]
- Assoc.Prof.Dr.ren.nat Rahmana Emran [Indonesia]
- Dr.ren.nat. I Made A Gelpal W [Indonesia]
- Moderator: Prof. Dr. Supriyatna

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International Seminar on Pharmaceutical Science and Technology [ISPST 2014]
## PARALEL SESSION

### First Day: Thursday, 18th September 2014

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**Moderator: Prof. Sahidin**

### Second Day: Friday, 19th September 2014

**Room: Bale Sawala**

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**Moderator: Dr. Tiana Mllanda**

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<td>Ade Zuhrotun</td>
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<td>Holis A Holik</td>
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PHYSICAL CHARACTERISTICS OF OVALBUMIN-LOADED ALGINATE MICROSPHERES PREPARED USING DIFFERENT CONCENTRATION OF BaCl2 AND ALGINATE

Dewi Melani Harivadi, Hendradi, Mukhis Bayu Irawan

Pharmaceutics Department, Faculty of Pharmacy, Airlangga University, Jl. Dharmawangsa Dalam, Surabaya 60282, Indonesia

*Corresponding author: dewifha96@yahoo.com

ABSTRACT

The use of microspheres systems nowadays is important in the pharmaceuticals formulation. Alginites have received much attention as biodegradable polymer for controlled protein delivery. Ovalbumin was used as model antigen. The aim of the present research was to evaluate physical characteristics of ovalbumin-loaded alginate microspheres using aerosolisation technique. Various concentrations of alginate and crosslinking BaCl2 were studied. In this study, the alginate microspheres were characterized in respect of encapsulation efficiency, yield, particle size, surface morphology and protein integrity. The comparative study between concentrations of cationic crosslinking agents BaCl2 and alginate polymer were investigated. Increasing concentration of alginate polymer from 2.5 to 3.5% reduced their particle size and formed smoother and spherical microspheres. Increasing Ba2+ concentration, simultaneous increased the encapsulation efficiency and yield. Scanning electron microscope (SEM) photomicrographs revealed that with the increase in the electrolyte concentration the density of the cross link is also increased. When the electrolyte concentration is increased from 0.5M to 0.75M the surface is smoother. Formula prepared using 0.75M BaCl2 and 3.5% alginate polymer result the highest encapsulation efficiency (92%), the highest microspheres yield (73%) and the smallest microspheres size (3.73µm). Most of the formulations maintain the integrity of ovalbumin after 2 hours incubation in pH 1.2 followed by 8 hours incubation in pH 7.4. The different formulations produced different physical characteristics of ovalbumin-loaded alginate microspheres.

Keywords: alginate, BaCl2, encapsulation, integrity, protein

References:

PMCA RELEASE STUDY OF BINARY LIPID BEESWAX AND MONOSTEARIC GLISERYL AS SOLID LIPID NANOParticle (SLN) BASE

Noorma Rosita, Dewi Melani Hariyadi, Dian Arfltasari, Widji Soeratri

Pharmaceutics Department Faculty of Pharmacy Universitas Airlangga
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ABSTRACT

Para methoxy cinnamic acid (PMCA) has been commonly widely used as antiinflammation drug. The aim of this research was to study release of PMCA from solid lipid nanoparticle (SLN) formed of binary lipid beeswax (BW) and monostearic glyceril (GMS). SLN PMCA is expected to prolong antiinflammation preparation. SLN-PMCA which used binary lipid BW-GMS 50:50 as SLN base has been proved in producing smallest particle size, physically as the most stable and give highest percentage of drug entrapment compared to its single lipid. SLN was made using binary lipid beeswax (BW) and monostearic glyceril (GMS) as solid lipid nanoparticle (SLN) base and Tween 80 as stabilizer. This SLN was produced using high shear homogenisation (HPH) method. Release study was conducted in phosphate buffer medium pH 7.4±0.05 at 32°C and stirred at 100 rpm using apparatus type 5-paddle override. PMCA concentration was measured spectrophotometrically at 286 nm. Release flux of PMCA from SLN base using beeswax as single lipid carrier was higher than SLN base using either monostearic glyceril as single lipid carrier or binary lipid beeswax (BW) and monostearic glyceril (GMS). In case of single lipid using monostearic glyceril (GMS), low entrapment efficiency, bigger particle size and physically unstable SLN was produced. SLN consist of binary lipid beeswax (BW) and monostearic glyceril (GMS) was selected due to its characteristics and ability to retard release of PMCA.

Keywords: Para methoxy cinnamate acid (PMCA), solid lipid nanostructure (SLN), beeswax, glycerilmonostearat, release

References:
The Organizing Committee wishes to announce our gratitude to the following who have contributed to the success of this seminar:

- **Keynote Speakers**
  - Prof. Federico Gago [Spain]
  - Prof. Dr. Herbert M Urbassek [Germany]
  - President Director of PT Kimia Farma Tbk [Indonesia]
  - Prof. Thiery Langer Ph.D [Austria]
- **ISPST 2014 Board Members**
- **Invited Speakers**
- **Oral and Poster Presenters**

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Nomor : 2312/UN3.1.5/KP/2014

Yang bertanda tangan di bawah ini:

Nama : Junaidi Khotib, S.Si.,M.Kes.,Ph.D
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Jabatan : Wakil Dekan II Fakultas Farmasi
Universitas Airlangga

dengan ini menugaskan kepada:

Nama : Dewi Melani Hariyadi, S.Si.,M.Phil.,Ph.D.,Apt
NIP : 197802262002122001
Jabatan : Dosen Fakultas Farmasi
Universitas Airlangga


Demikian Surat Penugasan ini untuk dilaksanakan dengan baik dan penuh tanggung jawab.

Surabaya, 15 September 2014

[Signature]

Dekan

Wakil Dekan II,

Junaidi Khotib, S.Si.,M.Kes.,Ph.D
NIP: 197010221995121001
FACULTY OF PHARMACY
UNIVERSITAS PADAINDJARAN

Certificate
Presented to
Dr. Melani

Department of Pharmaceutical Sciences and Technology 2014

Jogjakarta, Indonesia, 18-19 September 2014

Dean.

Dr. Ahmad Muhtadi, M.S., Apt.