Preface from the Editor

In order to disseminate to broader community, a proceeding consisted of scientific papers presented at the 2nd International Conference on Pharmacy and Advanced Pharmaceutical Sciences, held in Yogyakarta, Indonesia, 19 – 20 July 2011, is produced. The proceeding is divided into two books i.e. Clinical and Social Pharmacy and Pharmaceutical Science and Technology.

The conference was organized by the faculty of Pharmacy Universitas Gadjah Mada in collaboration with the Nara Institute of Science and Technology and Deutscher Akademischer Austausch Dienst-German Academic Exchange Service. This event was part of the faculty’s 65th Anniversary celebration as well as the 62th Anniversary of the Universitas Gadjah Mada. In this conference participants from 6 countries have participated of which 14 lectures within the field of Pharmaceutical care and sciences were presented by our invited speakers, followed by presentation of 160 researchers in form of oral and poster presentation. On behalf of the organizing committee, I would like to thank all invited speakers and presenters for participating the in International Conference on Pharmacy and Advanced Pharmaceutical Sciences and for giving valuable contribution to this proceeding.

Acknowledgements are addressed to the Rector of Universitas Gadjah Mada, the Nara Institute of Science and Technology, Japan, Deutscher Akademischer Austausch Dienst-German Academic Exchange Service in collaboration with Federal Foreign Office as well as all sponsors for the nice collaboration in bringing forth the conference. Furthermore, personally, I would like to express my deep appreciation to the members of the Organizing Committee for the good teamwork and the great effort to bring success to the conference and in producing the proceeding.

Finally, I hope this proceeding will give a remarkable contribution to broad scientific research, especially in the field of pharmacy and pharmaceutical sciences.

Yogyakarta, July 2011

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Welcome Message from Organizing Committee

Distinguished Ladies and Gentlemen,
On behalf of the Scientific and Organizing Committee, it is such a great pleasure for me to welcome all participants to Yogyakarta, to the 2nd International Conference on Pharmacy and Advanced Pharmaceutical Sciences 2011.

The conference is organized by the faculty of Pharmacy Universitas Gadjah Mada in collaboration with the Nara Institute of Science and Technology and Deutscher Akademischer Austausch Dienst-German Academic Exchange Service. This event is as part of the faculty's 65th Anniversary celebration as well as the 62th Anniversary of the Universitas Gadjah Mada. In this conference participants from 7 countries have participated of which 14 lectures within the field of Pharmaceutical care and sciences will be presented by our invited speakers, followed by presentation of 160 researchers in form of oral and poster presentation. Herewith we would like to express our gratitude to all speakers and presenters for joint us today to share advance knowledge and expertise in this scientific event.

The Organizing Committee gratefully acknowledges the Rector of Universitas Gadjah Mada, the Nara Institute of Science and Technology, Japan, Deutscher Akademischer Austausch Dienst-German Academic Exchange Service in co-operation with Federal Foreign Office well as all sponsors for the nice collaboration in bringing forth this conference. Furthermore, personally, I would like to express my deep appreciation to the members of the Organizing Committee, for the good teamwork and their great effort to bring success to the conference.

Finally, I wish all participants could benefiting from the Conference and have an enjoyable moments in Yogyakarta

Thank you very much
Remarks of the Dean of Pharmacy Faculty UGM
Prof. Dr. Marchaban, DESS., Apt

Assalamu’alaikumwr. wb.
Distinguished ladies & gentlemen.
First of all, on behalf of the Faculty of Pharmacy Universitas Gadjah Mada, I would like to welcome to all of you in Yogyakarta, thank you very much for your attention to come and to attend the 2nd International Conference on Pharmacy and Advanced Pharmaceutical Sciences. I hope we are all in health condition.

Ladies and gentlemen,
The conference is organized by the Faculty of Pharmacy UGM in collaboration with the Nara Institute of Science and Technology (NAIST) Japan and DAAD, Germany and held as part to celebrate the 65th anniversary of the Faculty of Pharmacy UGM and the 62nd anniversary of Universitas Gadjah Mada. In the conference, I hope we can communicate our recently information concerning social / clinical pharmacy and pharmaceutical sciences. I hope the conference will be very fruitful, very useful for all of us.
I address special thanks to the plenary speakers both from domestic and abroad, the oral and poster presenters, as well as to those who come just to know the development of clinical or social pharmacy and pharmaceutical science. Your willingness to come, to communicate and to share your experiences is highly appreciated.
Therefore, during almost whole day discussing scientific matter related to human health and welfare, I hope we can make a wonderful opportunity to make a scientific closer relationship while we enjoy the cultural performances of Yogyakarta presented by our pharmacy student.
Finally, I hope that this meeting will give benefits to all of us, and we may see each other again in a similar event in the near future.

I look forward to thank you all for attending this event
Wassalamu’alaikum warahmatullahi wabarakaatu
Opening Remarks by Rector of Universitas Gadjah Mada
Prof. Ir. Sudjarwadi, M. Eng., Ph. D
Assalamu’alaikum wr wb
Chairman of Presidential Advisory Board, Prof. Dr. Emil Salim

Distinguished guests, ladies and gentlemen,
Good morning. It’s truly a privilege for me to be able to welcome all of you to The Second International Conference on Pharmacy and Advance Pharmaceutical sciences in Yogyakarta with theme “Bridging Science to Pharmacy Practice” that is organized in cooperation with DAAD and the Nara Institute of Science and Technology Japan to celebrate the 65th Anniversary of Faculty of Pharmacy UGM. This scientific gathering is aimed to update recent findings in pharmacy and advanced pharmaceutical sciences. It is expected that researchers, academia, practitioners, policy makers as well as students and other participants can learn and share with each other about the latest developments in pharmacy and pharmaceutical science. This meeting is much required to develop the participant’s knowledge in the science and address the pharmacological issues that arise. Moreover, in the fast developing condition of pharmaceuticals due to the increasing demands and mobility of people around the world and identifications of diseases that emerge, it is highly important for scientists to better contribute their knowledge to the wider public.
Participants here all invited to seek for and introduce new ways on how to bring this knowledge to the pharmacy practices to be able to benefit the public. I hope that in these two days you will all be involved in insightful and inspiring discussions that can produce such new ways, new findings and alternatives as well as solutions to current problems in the are of pharmacy. It is my belief that all of us will benefit much from this special meeting. I wish you have a good and enjoyable gathering while in Jogja. Lastly, my sincere thanks and deep appreciation go to everyone who have made this seminar a success.

Thank you very much.
Wassalamu’alaikum wr wb.
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ABSTRACT

The mixture of betel leaf (Piper betle L), gambier (Uncaria gambir, Roxb) and slaked lime (calcium hydroxide) has been used as one of traditional medicine in Indonesia and other countries with multi purpose for along time. Generally, the mixture of extract is used for chewing in their natural raw condition along with many other ingredients like betel, areca nut, gambier, cardamom, slaked lime, etc. Some people use it as an immunomodulatory agent. To ensure the effectiveness of the mixture of betel chewing as an immunomodulatory agents. Materials and A mixture that consists of water extract of betel leaves, gambir and slaked lime, the extract was given to 7 groups of mice for 14 days with doses 100, 200 and 400 mg/kg body weight. Two kinds of Immunomodulatory drug in syrup form commonly used in the treatment of infectious was used as positive controls. Then the peritoneal fluid of mice containing macrophage cells was isolated by performing surgery. This study calculated the number of phagocytosis activity and capacity of macrophage cells of mice, after one hour intra peritoneal injection Staphylococcus epidermidis on each group of mice. The betel chewing component mixture group compared with negative controls showed an increase of phagocytosis activity of 86.6%, 94.2% and 88.3% for doses of 100, 200 and 400 mg/kg body weight, respectively. Meanwhile the phagocytosis capacity was found for an average of 50 macrophage cells was 626.1, 806.4 and 754.5 bacteria for dose of 100, 200 and 400 mg/kg body weight respectively. For the doses administered the 200 mg/kg dose showed the most efficacy where both the phagocytic activity and capacity was calculated statistically significant (p≤0.05)

Key words: Immunomodulatory, betel, gambier, slaked lime.

INTRODUCTION

Chewing of betel nut is an ancient custom in Indonesia and in some countries, such as, several parts of south-east Asia, south Asia, the south Pacific islands and Taiwan. This practice dates back several thousand years and is deeply entrenched in the culture of the population. It is estimated, there are about 600 juta people chewing betel nut in the world, the habit of chewing of betel nut is a habit the second largest after smoking in the world (Neilson and Heischober, 1999).

Chewing of betel nut is traditionally known to be useful for the treatment of various diseases such as, bad breath, boils and abscesses, conjunctivitis, constipation, headache, hysteria, itch, mastitis, mastoiditis, leucorrhoea, otitis media, ringworm, swelling of gum, rheumatism, abrasion, cuts and injuries etc, as folk medicine. (Nair et al, 2004).

In Indonesia generally, the people chewing betel nut is a mixture of betel leaf, gambier, slaked lime and areca nut. In this study, areca nut was not used, because according to the results of research conducted by several researchers, areca nut has been related mainly to oral, pharyngeal and oesophageal cancer. Areca-nut alkaloids such as, arecoline, arecaidine, guvacoline and guvacine through metabolism in the body will transformed into nitrosamine derivatives, in which these compounds are the causes of oral cancer (Canniff et al, 1981; Chang, et al, 2002; Nair et al, 2004).

On the other hand, betel leaves, gambier and slaked lime are materials of natural medicines, almost have no side effects, but have many benefits for body health, especially to combat infectious
Modulation of Macrophage Immune Response

Diseases. (Nair et al, 2004) So far, most researchers have been conducted research for the components of chewing betel for the treatment of infectious diseases, while for immunomodulatory agent in the form of a mixture has not been found in existing publications. However, eugenol as the main content of betel leaf and catechin as the main content of Gambier have been known as immunomodulatory agents (Chikara, 2005; Biswas et al, 2002).

Therefore, this study aims to determine the effectiveness of a mixture of betel chewing component as immunomodulatory agents. Two kinds of Immunomodulatory drug in syrup form commonly used in the treatment of infectious was used as positive controls

METHODOLOGY

Materials
The materials of each plant were obtained from a single source, Betel (Piper betle, L), leaves from Bogor (Balitro), gambier (Uncaria gambir, Roxb) from Payakumbuh (West Sumatra), while, sliced lime was obtained from E-merck.

Preparation of crude aqueous extract of a mixture chewing of betel
The preparation of a mixture was conducted by blending betel leaf, gambier and sliced lime with a ratio 421: 70: 9, add water 500 mL. The mixture was filtered with Whatman paper No.IV. Then, dried with a freeze drier and calculated the yield was obtained.

Preparation of experimental animals
The animals were used for experiments acclimatization for 14 days, then, selected animals were eligible. The number of animals for each group were calculated with the formula Federer (Each group consisted of for mice).

Animals were divided into 7 groups randomly, i.e; extract mixture of low-dose group (100 mg/kg body weight of mice), extract mixture of medium-dose group (200 mg/kg body weight of mice), extract mixture of large-dose group (400 mg/kg body weight of mice), normal control, negative control (CMC 0.5%), positive control 1 (Echinacea syrup 3.1 ml/kg body weight of mice), positive control 2 (Phyllanthus niruri syrup 6.2 ml/kg body weight of mice).

Preparation of bacterial suspension
The Staphylococcus epidermidis was obtained from microbiology laboratory Indonesian Institute of Sciences, Cibinong, Bogor. The stock of these bacteria was kept in nutrient agar, then inoculated into the broth medium, incubation at shaker incubator with speed 120 rpm, temperature 30 °C, for 24 hours until reach the active phase. Adjust the amount of bacteria by using spectrophotometer UV-visible ±10⁷ cfu / ml (T = 25%, λ = 580 nm)

Treatment of experimental animals (Kusmardi et al, 2006)
Each group of experimental animals were administered the test preparation once daily according to with groups and doses, as mentioned above, for 14 days. On the 15th day, experimental animals was injected intra peritonial with 0.5 ml of Staphylococcus epidermidis (10⁹ cfu/ml). After one hour of injection, the experimental animals were carried out surgery. Into the peritonium cavity was injected 1 ml phosphate buffered saline solution and taken fluids peritoneum.

Preparation of glass slides for analysis (Dey et al, 1996)
Put 100 µl peritoneal fluid on an object glass, fixation with absolute methanol for 5 minutes, do the staining with Giemsa 4%, leave for 45 minutes, dip into 0.1 M acetic acid, washing with distilled water, dried and observed by light microscopy.

Determination of macrophage phago-cytosis activity and capacity (Dey et al, 1996)
The determination value phagocytosis activity of macrophages was conducted with calculate the amount of macrophages that carried out phagocytosis activity of 100 macrophages against Staphylococcus epidermidis, the selection of macrophages was conducted as randomly. Perform the calculate was conducted three times from different slide for one experimental animal.

The determination value phagocytosis capacity of macrophages was conducted with calculate the amount 50 of macrophages that still active carried out phagocytosis against Staphylococcus epidermidis, the selection of macrophages was conducted as randomly. Perform the calculate was conducted three times from different slide for one experimental animal.

RESULTS AND DISCUSSIONS

From the research results was found the yield of extract mixture of betle, gambier and slaked lime with ratio 421 :70 : 9 about 9.79% dry extract. The determination of ratio number is based on preliminary experiments, where the number 421 gram is converted from the people chewing betel for small doses 4 pieces betel leaf once a day. The based on of this dose conversion, for medium doses was administered 8 pieces and for large doses was administered 16 pieces betel leaf once a day. The yield of dry extract was found just about 9.79 %, because, the fresh betel leaves contain about 85-90% water (Guha, 2006).

Table 1. Effect phagocitosis activity and capacity of mixture of betle, gambier and slaked lime to macrophage cell

<table>
<thead>
<tr>
<th>Name of sample</th>
<th>Phagocytosis activity</th>
<th>Phagocytosis capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal control</td>
<td>63.58 ± 1.78</td>
<td>362.67 ± 8.48</td>
</tr>
<tr>
<td>Negative control</td>
<td>70.92 ± 0.90</td>
<td>395.17 ± 4.43</td>
</tr>
<tr>
<td>Positive control 1</td>
<td>92.00 ± 0.27</td>
<td>770.83 ± 14.89</td>
</tr>
<tr>
<td>Positive control 2</td>
<td>87.33 ± 0.72</td>
<td>756.08 ± 13.82</td>
</tr>
<tr>
<td>100 mg/kg of body weight</td>
<td>86.58 ± 0.65</td>
<td>626.08 ± 12.68</td>
</tr>
<tr>
<td>200 mg/kg of body weight</td>
<td>94.17 ± 0.88</td>
<td>806.43 ± 15.11</td>
</tr>
<tr>
<td>400 mg/kg of body weight</td>
<td>88.33 ± 1.15</td>
<td>754.50 ± 9.38</td>
</tr>
</tbody>
</table>

The statistical test (Table 1) showed that the treated groups for phagocytosis activity and capacity (doses 100, 200 and 400 mg/kg body weight) are significantly different from the normal control, and negative control, while for doses 200 mg/kg of body weight beside are significantly different for normal control and negative control also for both of positive control (p<0.05).

Phagocytosis activity increase from dose 100 mg to dose 200 mg/kg body weight, ie; from 86.8% to 94.17%, while, from dose 200 mg to dose 400 mg/kg body weight was occurred the opposite, ie; Phagocytosis activity decrease from 94.17% to 88.33%.

Likewise, for phagocytosis capacity increase from dose 100 mg to dose 200 mg/kg body weight, ie; from 626.08 to 806.42, while, from dose 200 mg to dose 400 mg/kg body weight was occurred the opposite, ie; Phagocytosis capacity decrease from 806.43 to 754.50.

In research was carried out by Domingues et al (2011) with topic; immunomodulatory effect of Uncaria tomentosa Aqueous-ethanol Extract Triggers an Immunomodulation toward a Th2 Cytokine Profile, in this study also was occurred at doses of 125 mg/kg body weight works as stimulant and at a dose of 500 mg work as immunosuppression, as shown in the Figure 2 and Figure 3.
Modulation of Macrophage Immune Response

Figure 1. Effect phagocytosis activity of mixture of betle, gambier and slaked lime to macrophage cell of mice

Nor con = Normal control, Neg con = Negative control, Pos con 1 = Positive control 1, Pos con 2 = Positive control 2, S dos = 100mg/kg bw, M dos = 200 mg/kg bw, L dos = 400 mg/kg bw

Figure 2. Effect phagocytosis capacity of mixture of betle, gambier and slaked lime to macrophage cell of mice

According to Labro (2000) this occurs due to the large doses will cause metabolic disorders immune system or destroy of certain parts on the macrophage cell, because the mechanism action of macrophage cells not only work as phagocytosis of bacteria or foreign substances in the body, but macrophage cell also released some mediator chemical for the interaction between the immune system in the body, when metabolism of immune system is disturbed, so cause phagocytosis activity and capacity also will be disturbed. However, when the dose is administered appropriate, macrophage cells will work together with other parts of the immune system in against the bacteria, as occurs in a dose of 200 mg/kg body weight, the activity and capacity of macrophage cells already reached the optimum condition, as shown in the Figure 1 and Figure 2.

Each of the materials was used to make the mixture in this study, have activity as antibacterial. Betel leaf has been known as an antibacterial against several bacterial pathogens, such as; Proteus mirabilis, Proteus vulgaris, Salmonella typhymurium, Shigella flexneri Staphylococcus aureus, Streptococcus mutans, Staphylococcus faecalis, Candida albicans, Vibrio cholerae, Diplococcus pneumoniae
and Klebsiella aerogenes (Musdja 1. et al, 2011; Kumar et al, 2010; Shitut et al, 1999). Gambier has been known as an antibacterial agent against several bacterial pathogens, such as: Staphylococcus epidermidis, Staphylococcus aureus Bacillus subtilis, Shigella flexneri, Proteus aeruginosa, Escherichia coli, Proteus vulgaris and Proteus mirabilis. (Musdja 2. et al, 2011). Sliked lime (CaOH₂) with concentration 0,005% already has activity as antibacterial (Asada et al, 2001).

According to Labro (2000), drug which have effect as immunomodulatory agent and antibacterial will be better to preventive and therapy for infectious diseases, due to the synergistic effect of the immunomodulatory agent with antibacterial, when compared to the drug that only have the effect as immunomodulatory agent, or is only have an effect as antibacterial.

CONCLUSION
The mixture of betel leaf ( Piper betel L.), gambier (Uncaria gambir, Roxb) and slaked lime (calcium hydroxide) has effect as immunomodulatory agent. Dose of 200 mg/kg body weight is better than dose of 100 mg / kg and dose of 400 mg/kg body weight.

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DISCUSSION

Metabolic Engineering Strategies for Optimization Of Medicinal And Aromatic Plants : Expectations And Realitis
Oliver Kayser
Applying genetic and biotechnological techniques, like metabolic engineering and pathway optimization to increase productivity is the main focus of research. Because of some drawbacks with plant cell culture and isolated enzymes giving no sufficient high production for commercialization, research strategies shifted more to metabolic engeneering. Engineering a microorganism is proven as a valuable tool and concept have been transferred to plant science and opened new promising perspectives for improving plants and cell lines.

Q:
Prof. Soedarsono:
Enzim blocked in biosynthetic pathway, its blocked mechanism only qualitative or also quantitative? metabolic engineering that you make the target destination is predictable or still trial and error? In increasing or decrease some of the metabolites, the fact is weneed to give or may estrange downregulation?
For edible vaccines that could be used for injection? Examples of small peptides (epitopes) that are expressed in plants, can it be taken?

A:
We doing qualitative not quantitative pathway blocked, so we see small/unsmall. On a quantitative theory can be done but in practice we do not do it we did a trial and error because there is no information about the genome, the steps taken in selecting and then check whether the pathway, including downregulation/upregulation after it matched with the problem.
This test not only downregulation but we also practice upregulation so viewed from compounds for define the concept.

Oliver: Is a nice idea to take a part of the plant but I do not know what a market exists, the animal is difference because the system is more specific expression, maybe Mr. Andreas can answer.

Andreas: there are programs in our company manufacture the edible film but to be made of injection this is dangerous because it entered into the system so that needs the regulation system.

Regulation Needed On Traditional Medicines In Developing Countries From Plant Resources To Finished Product
Swijjiyo Pramono
The use of traditional medicines in developing country still trends to increase both in the daily life of the poor and in industrial level. This is because the drugs are considered safer than chemical drugs. but the bad handling can cause the growth of microbes, aflatoxin and heavy metal contamination. The collaboration between the authority, farmers or collectors, research institution and industries will give optimal result in achieving sustainability, safety, efficacy and quality of traditional medicines.

Q:
how the regulation of traditional medicine? done checking whether the biological activity?
What do you suggest to manage medicinal plants so that its use does not cause damage?
the synthetic compound, could an industry do repacked in the form of traditional medicine? is there regulatory to act the problems?

A:
yes, the authority took the product on the market and then be checked biology, chemistry and pharmacology compared with the existing parameters. if there is a problem, the authority will contact the industry to give a warning or it could also pull the product from the market. one of which is to Regulation of the use of endangered medicinal plants by the authority. authority will ask the industry if they use plants that are endangered in their formulas. authorities also perform control so that the use of plants is limited. limitation causes the high cost, but in general the industry is very sympathetic, although very difficult to manage them. Ever found in herbal medicine "pegal linu" can cause not only the moon face but also because it contains dexametasones osteoporosis. the government examine the small shop that provides a "jamu". but because the small shop does not apply to pay after, then it is very unwise because it would harm small shops, the government followed up by asking the police to conduct checks on the industry

Andreas Bernkop S
Non-Invasive Delivery Of Therapeutic Peptides: Barriers, Strategies And Future Trends
Resume:
many peptide therapeutics administered parenterally but these treatments tend to be preferred because it is difficult, painful, and sometimes dangerous. development of innovation needed to get a high bioavailability, among others, overcome barriers. strategies overcome, strategies to overcome these barriers are based on auxiliary agents such as enzyme inhibitors and permeation enhancers. The combination with advanced drug delivery system can result in formulations providing sufficient high peptide drug bioavailability after non-invasive administration.

Q:
1. Insanu: is posible if we using cycle peptide in your methode?
2. Oliver K: how to do to take your amino acid sequence to be prodrugs or new molecules and to design computer?
3. Sismindari: is it possible to create a formula with specific targets such as cancer?

A:
1. yes, we must differentiate the cyclic peptides that have conditioned the dimensions of enzymatic is eksopeptidase or aminopeptidase, of course you must have a program with exopeptidase and peptide cyclimization.
2. yes, the point is to do research to make simple compounds using amino acids. The problem is to consider the use of guidelines from the formulation, its more hidrofobic or not, where the binding site, etc; required privileges and compromise with the peptide contained.
3. yes, of course, possible to make a cancer drug target, but not exactly true because during the time outstanding not only attack specific targets, so it is necessary to design capable of attacking the cancer but provide protection to the other parts, and it may be produced

APORANE CHAIYAKUM, MSc, BCP
1. Q: What is the reason that leadership is needed to be improved in clinical pharmacy skill?
   A: When we work as a team in the hospital, sometimes we need to give some intervention. And that intervention is needed to be following by another in our team. So we need some confident to influence your team. That confident which should be increased by improved our leadership skill.
2. Q: How is training of leadership skill implementation in pharmacy education?
   A: We try to do group discussion to pharmacy student. And for the clinical pharmacy we put in the ward so they have some responsibility to do some intervention with their team. The most important thing that should be remembered, we need to show what the clinical pharmacy is.

3. Q: Is there any financial impact (Salary) to the preceptors (hospital) which approved the training?
   A: To encourage training student, they need to study in real situations. And they will pay the pharmacist preceptor.

**Genetic Polymorphisms of the Cytochrome P450 Subtypes CYP-2D6, CYP-2C9, and CYP-2C19 in Ethnic Makasar Population**

ZULLIES IKAWATI

1. Q: What is benefit of the participant joined for being as subject in this research?
   A: They will know about their cytochrome characteristic (is there any mutation or not.)

2. Q: How if there is a mutation in their cytochrome?
   A: We can inform the participant about their metabolized and educated about which kind of drug or food that will alter some medicines if they are taking that medicines.

3. Q: How could we know that we are affected some mutation?
   A: It is too difficult if we want to see from our physical appearances.

4. Q: What is the most caused a mutation?
   A: Almost mutation can be caused by some heritage, another factor for example: cancer, influence from environment, cross marriage can caused some mutation.

**The Benefit of Curcuma Xanthorrhiza and Curcuma Domestica For Osteoarthritis Treatment**

Dr. NYOMAN KERTJA, Sp.PD, KR

1. Q: There is a research which conclusion is chronic used of curcumin can cause liver damaged and it was so different with your project. Could you explain about it?
   A: There is a difference in dose curcumin. In that research, they use 10 g/day, and dose that we suggest to use is 15 mg/kg/weight

2. Q: Is the patient have the same baseline?
   A: We use 64 patient which divided into 2 groups and there is no different at baseline data at all the subjects.

**Improving Drug Safety with The Use of Information Technology**

Invited speaker: PAULINE SIEW MEI LAI

1. Q: How about the manual operation, is still use there?
   A: Although computerized are developing, the manual operation is still used too.

2. Q: How about the development of e-prescribing in the community pharmacy?
   A: Development of community pharmacist in Malaysia with e-prescribing still need a long time

3. Q: How do you monitor if there’s any compatibles material in TPN?
   A: Some compound which can make precipitation must be given an attention for example calcium phosphide, must be mixed at the end of preparation, but usually the computerized will give some alert.

**Social Pharmacy Education and Research: The needs and Challenges**

MOHAMED AZMI AHMAD HASSALI

1. Q: How do you face the challenge?
A: It is about how your product can give benefit to the social and thinking not just came to bargain the product, then work with generic industrial to develop generic medicine. And the most important thing is showing what you can do.

2. Q: What is social pharmacy competency?
   A: It needs knowledge about medical pluralism and need to understand and aware with culture for example herbs preparation as a food supplement etc.

**Marketing in Pharma**
Invited speaker: HARRY BAGYO
1. Q: Is there any marketing strategy, beside deal with the doctor?
   A: It is better if we have national insurance, so we can improve our rational medication too.

**The Profile of Prescription Services in Community Pharmacies in Surabaya: A Simulated Patient Method**
UMI ATHUJA
1. Q: Based on your recommendation, could you give a reason why you recommendation to do research about pharmacist performance toward medicine information?
   A: In our result, we could give information about drug information service because pharmacist staff just could to do administration screening, if they want to give drug information, it needs supervision by pharmacist.

**Identification of Antibiotic Use in Hospitalized Chronic Renal Failure Patients**
VICTORIA YULITA FITRIANI
1. Q: Could you explain about the toxicity of using antibiotic?
   A: There is no laboratory data and symptom can show about toxicity. It might be toxicity when use chronically.
2. Q: Which antibiotic is the most toxic?
   A: There is no data report about the most toxic antibiotic.

**Improving Diabetic Patient’s Adherence to Treatment Program by Using CBIA-DM Strategy in Hospital-Based Patient Community**
TITIEN SIWI HARTAYU
1. Q: How do you collect data about adherence activities, whereas you just collect data about knowledge and attitude?
   A: The adherence was showed by increasing of practice score supported by the data of pill counting and blood glucose level.

**Health-Related Quality of Life in Type 2 Diabetes Outpatient with Insulin in RSUP DR SARDJITO Yogyakarta Hospital**
TRI MURTI ANDAYANI
1. Q: Is insulin in that study is given in the first time?
   A: Yes, the inclusion criteria in my study were patient whose blood glucose target not achieved for 3 month and switching in the therapy into insulin.
2. Q: Why did you compare short acting insulin and premixed insulin? As we know, short acting insulin is for reducing post prandial glucose and premix insulin is for reducing post prandial and basal glucose as well, I think that two insulin are not comparable because of totally different mode of action.
   A: It can be comparable because premixed insulin is also containing 30% of short acting insulin agent. We focused on the impact of insulin type 2 (health related quality of life).
History Taking Profile on Self Medication Services of Diarrhea Patients at Pharmacies in Surabaya
EKARINA RATNA HIMAWATI
Q : How can we make sure the research data was really taken from the sample respondents?
A : By recording the history taking conversation (the actor bring a tape recorder during the visit)
Q : Which data were colllected from the pharmacist who recognized the simulated patient as a researcher?
A : We drop those data (reject) because if the pharmacist recognized the actor, the data was not valid.

Evaluation of Pharmacoepidemiology Course for Undergraduate Pharmacy Program in Malaysia
SHAFIE AZRUL ANWAR
Q : What is the strategy to avoid peer-group assessment or manipulate score?
A : The student have their individual task which is sent by email to the trainer course.

How Do Community Pharmacist Manage Their Medicines?
ANILA IMPIAN SUKORINI
Q : Is there any regulation about the new pharmacy establishment by the non-pharmacist?
A : There is no regulation cover it until now.
Q : How about the prescription drug when pharmacist decided to sold with cheaper price, in order to manage expired date where is getting closer?
A : The pharmacist usually get information deeply and give some counseling in order to assurance that patient's adherence will better.

Recent Progress On Biological Activities of Benzylidenecyclopentanone Analogues of Curcumin on Histamin – Mediated Allergy Inflammation
AGUNG ENDO RURODO
Q : How is interaction model between curcumin and histamine reseptor?
A : There is no report which can explain about it, but it might be has the same mechanism with PGV-0.

Reduction of Blood Glucose Levels of Ethanolic Extract of Bungur (Largestroemia speciosa (L) pers) Leaves in Alloxan Induced Diabetic Rats
ANGELICA KRESNAMURTI
Q : Why do you choose alloxan for conditioning diabetic type 2 in rats? As we know, alloxan will destroy B-cell in pancreas and insulin deficiency will be happened. Deficiency of insulin is categorized in diabetic mellitus type 1.
A : Some research said that alloxan just destroy 50 % of all the B-Cells in pancreas, so alloxan can be used for conditioning the diabetic mellitus type 2.

Naringenin as Chemosensitizing Agent on Resistant Breast Cancer MCF-7 Cells
DYANINGTYAS DEWI PAMUNGKAS PUTRI
Q : How did you get the naringeni compound?
A : Buy from some industrial pharmacy
Q : How did you keep the cell resistance by doxorubicin?
A : Treat with 7 nM of doxorubicin and 25 nM of doxorubicin

Selectivity of Awar-Awar (Ficus septica burm f.) Etanolic Extract to WIDR Cancer Cell Line
ERLINA RIVANTI
Q : Why did you use ethanol?
A: Because ethanol is the universal solvent that can be solveable with the compound.
Q: Why do you dry the compound?
A: Because by drying we can get bigger amount of the compound.

Ethanolic extract of Citrus Maxima Peels as the source of Phytiestrogens based on Increasing Uterine Weight and c-Myc Expression on Mammary Glands of Ovariectomized Sprague Dawley Female Rats
FIKRI AMALIA
Q: Is there another parameter to assess phytoestrogen activities?
A: Bone density will increase by giving estrogen
Q: Which formulation that can be applied for citrus maxima?
A: It will be simple in oral route.
Q: Is there any relation of antioxidant and phytoestrogen activities?
A: There is no relationship of both of them.

Molecular Dynamic Simulation of siRNA and modified siRNAs
Elisabeth Catherina W
Q: what can your research help to siRNA and what the benefit of it?
A: As we see that the wild type is not stable at on. siRNA we can change the pharmaceutical dosage form. There is many I did to stabilize for example by lock the nucleid. The ribose has hidroxy group. The hidroxy group can be bounded to another, it is mean lock nucleid acid. There is some modification of siRNA.

Lack of evidence for anti-migratory effect of neolignan activators of PPARy on VSMC
Nanang fakhruddin
Q: Did you do western blot with PPARy is here for make sure this is also inhibitor adipogenesis?
A: I did not do western blot in this case, but my friend in our laboratory did the experiment with magnolol because it very natural compound. My friend did the glucose uptake and this is positif and also western blot.
Q: Do you think you can explore this compound like from the plant that growth in Indonesia?
A: Actually the story how we select this plant is not easy. First we make computer model with PPARy and then we use natural product databases then we choose compound that can find to the receptor and we back to the nature with plant contain with this compound. we did also several modification with the brand of the structure. We try already well compound is magnolol modification. In Indonesia maybe we can start also with the ethnomedicine approach.

Hepatoprotective Effect of Waru (Hibiscus tiliaeceus) leaves infusion in Paracetamol induced hepatotoxic Rats
Harwoko
Q: How many gram or mg if you calculated this for using in human?
A: I make infusion in 3 concentration 2%, 4% and 8% then i calculate it with the dose conversion. For 2% we calculate it 250 mg/Kg/BW, 4% is 500 mg/Kg/BW and 8% is 1000 mg/kg/BW. In this research I calculate the dose from human to rat but I didn't calculate from rat to human again.
Q: What kind of saponin had been identified in this research?
A: In this investigation we use two pereaction, so we can't identified what kind of saponin of this. We use chemical reaction only foam reaction.
Cytotoxic Activity and Apoptosis Induction of Hydrocotyle Sibthorpioides in MCF-7 Cells
Agustina Setiawati
Q: The penetration problem that they will get the different activity, is it general or it just your hypothesis or have you done some like clarification of those penetration thing because maybe also the compound have different mechanism not only the penetration!
A: It just our assumption first. So we didn’t do what going on to the cell yet, just do further molecular research on yet. Maybe we can make sure what happen to the cell with other method like western blot or other.
Q: Is it same with Centella asiatica?
A: No, it is different. Firstly it is classified into one genus but after the research of some researcher the Centella asiatica is out from this one. The morphology of leaves is different.
Q: How about the stability of the compound and is this herbs also be traditional medicine had been used for the other?
A: Actually we did not use the compound or isolated compound from this herbs. We just took the extract. In traditional Indonesian medicine is usually used for antioxidant. There so many research about this herbs is into antioxidant activity of this herbs so I think for cytotoxic activity in Indonesian maybe no.

Hesperetin enhances cancer cell growth inhibition induced by doxorubicin on doxorubicin resistant MCF-7 Cell by Sarmoko and Study of Hesperidin as Preventive Resistance Agent in MCF-7 Breast Cancer Cells Line Resistant Doxorubicin
Rifky Febriansah
Q: Why the two research using MCF-7, is there any characteristic specific of MCF-7?
Q: Is this kind of treatment using hesperidin and hesperetin only suitable for the cell which overexpression the P-gP?
Q: Hesperetin is the aglycon of the hesperidin, why the hesperidin more potent than hesperetin?
A: We use MCF-7 as resistant model because according the previous study said that the MCF-7 cell resistant have a characteristic with the overexpression of P-gP. So we want to know about the mechanism is right or not and to prove on with mechanism is right or not. So from this pre-eliminary research, we think the MCF-7 resistant in this research is through in P-gP mechanism.
A: One of characteristic MCF-7 is overexpression P-gP and hesperetin or hesperidin can over take this problem, so we take this more just cell to our research.
A: Many target can cause resistant, P-gP is one of resistant gene by MDR. The other gene that related with resistance for example PCRP and MRP. PCRP is the center resistance protein which can expression ABC G2 protein. So P-gP is one of protein and targeted therapy for resistant problem. There are many target cause resistant and P-gP is one of them.
A: we also not yet get the reason where hesperidin more potent than hesperetin. For the possibility of the reason maybe it because hesperidin is a glycoside and hesperetin is aglycon. It different in structure. From this chemically, hesperidin more soluble water than hesperetin, so it can distribute more effective and can penetrate on cell more easy than hesperetin. In addition we know that flavonoid can over take resistant with 2 mechanism that is inhibit both of expression and activation of P-gP so flavonoid can dual mechanism inhibition.
Modulation of Macrophage Immune Responses of Extract Mixture of Betel Leaf (Piper betle, l), Gambier (Uncaria gambier, roxb) and Calcium Hydroxide on Phagocytic Cells of Mice
Muhammad yanic Musdja

Q: Are people still attractive to chew this the one that your formula because everyday they like to “menyinang” because the stimulatory effect of Nicotiana tobacum and Areca cathecu, it is not contain with true ingredient, whether is it still good taste?

A: Some people just use for chewing piper betle, gambier and Calcium hidroxide or like this plant and some people like in India use Areca cathecu and tobacco. There are research by WHO that when we chew it more than twice everyday, it can cause mouth cancer. Therefore in India recommended to do not chew betle, areca cathecu, and tobacco because tobacco and alkaloid like arecaidine and arecoline is synergistic same like benzopiren act. In our body the mechanism of arecaidine and arecoline same with benzopiren

Validation of Mercury Analyzer Technique for Mercury Determination in Snake Fruit
Eka Noviana (Faculty of Pharmacy, Gadjah Mada University, Yogyakarta, Indonesia)

Q: Our campus is developing a kind of test kits of mercury. Is there another method that can be used? This method is considered expensive

A: There is a simpler method who is AAS (Atomic Absorption Spectrophotometry). The method used in this study was similar AAS higher levels of sensitivity but because it is designed specifically for mercury analysis

Q: What is critical stage in the preparation of the samples so obtained samples meet terms of purity?

A: For sample preparation is a good idea to do the elimination of impurities prior first. However, this tool is automatically able to separate the samples from polluter

Q: How the selectivity of these methods to other compounds or compound-compounds that affect?

A: Metode tersebut sudah sangat selektif terhadap merkuri. Untuk senyawa lain akan menghasilkan absorbabn yang lebih rendah

DSC in Fast Determination of Counterfeit Paracetamol
Ahmad Yusri Mohd Yusop (Department of Pharmacy, Faculty of Medicine, University of Malaya)

Q: Why choose paracetamol in research? what the reasons for the selection counterfeit paracetamol?

A: Paracetamol is commonly known to the public as an analgesic and antipyretic. At the time of sampling with simple defects there are 5 samples taken place in Malaysia. Only one who qualifies as a sample.

Q: How to analyze a compound suspected of paracetamol counterfeit?

A: Using HPLC, in original and not original testing

Simultaneous Determination of Caffeine and Nicotinamide in Energy Drinks by First-Order Derivative Spectrophotometry
Liliek Nurhidayati ((Faculty of Pharmacy, Pancasila University, Jakarta)

Q: In Table 2, the listed dose of nicotine and caffeine. Percent recovery is obtained from where and what the purpose of comparing between the initial material and its derivatives?

A: 20 mg dose of nicotine, caffeine 50 mg. Percent recovery is obtained by standard USP. Data processing using software to obtain the results of such comparisons.

Metal Chelating Activity of Rice Bran and Rice Husk
Kartini (Faculty of Pharmacy, University of Surabaya)

Q: Can you explain why used methal chelating activity method? Another method?
A: This method was chosen because many studies use these methods to antioxidants test. There are other methods to test the antioxidant such as DPPH method, another reduction reaction

Q: Correction to the conclusion. The statement said that the extracts have activity as inhibitors or as khelating metal?

A: Several compounds have activity as khelating metal so that it can be assumed to inhibit oxidation (antioxidants)

Synthesis and Anticancer Activity of Antimycin A3 Analogue
Adi Arisianti (Department of Medical Chemistry, Faculty of Medicine, University of Indonesia, Indonesia)

Q: EC_{50} values between analog 1 may increase double, what are the benefits?

A: Make these compounds is not easy. Require many steps. The profits earned on each step can produce more than one ring.

Q: How solubility of analogous compounds?

A: Analogue compounds are very water soluble. The solution is also very easy to recrystallized.

Sterilization Heat Effect to Gel Base Physical Properties: Gelling Agent CMC Na and Ca Alginate Case Study
Sri Hartati Yuliani (Faculty of Pharmacy Gadjah Mada University)

Q: Why in the sterilization process with a certain level of warming, a large effect on viscosity?

A: Research done by comparing the sterilization by heat and without heat. It aims to determine the effect of heat sterilization process pd to changes in viscosity. The result states that the wet heat a smaller effect than dry heat sterilization. The physical properties of gel time and the heat affected

Q: Considered compare between wet heat and dry heat

A: The presence of water causes hydrolysis and oxidation reactions. It did not occur in the formulation so that its influence can be ascertained only at the time and temperature.

Q: The use of CMC-Na and Ca-alginate in the formulation has a specific concentration for each of the sterilization process. Why choose these concentrations and for what reason?

A: Selection refers to excipients Handbook, which states that CMC-Na and Ca-alginate sterilized at a certain temperature and if they will be mixed into a gel base.

Dissolution Profile of Acetaminophen Tablet and Ibuprofen Tablet With I–HPC 21, I–HPC 22, and Sodium Starch Glycolate as Disintegrant in Wet Granulation Method
Yoga Windhu Wardhana (Faculty of Pharmacy, Universitas Padjadjaran)

Q: Method for making tablets using the technique of granulation or non granulation?

A: Using the method of granulation (extract granular) to control violence

Q: What is the difference which is reflected in the dissolution profile curve?

A: The curve shows that acetaminophen destroyed faster than ibuprofen

In vitro Antibacterial Activity of Nigella sativa Seeds Against Streptococcus pyogenes
Endang Dwi Wulansari (STIFAR “Yayasan Pharmasi” Semarang)

Q: What is the reason to continue research with a concentration below the previous?

A: The method used in this study is diffusion rather than dilution. Fraction n-hexane can not be associated with the diffuse component of the compounds contained there in. Aiming to obtain the MIC so it needs to do research with a different concentration than before. Thus
it can be seen that the lowest concentration effective against the bacteria *Streptococcus pyogenes*.

Q : PEG used is a liquid with the diffusion method, how to influence PEG on the antibacterial properties?
A : PEG is non-polar and is used as a negative control. In the test does not inhibition zones obtained so that the PEG did not provide antibacterial activity against *Streptococcus pyogenes*.

**Fast Dissolving Tablet Formulation of Metoclopramide Hydrochloride by Addition of Collidon CI-F as Superdisintegrant**
Dolih Gozali (Faculty of Pharmacy, Universitas Padjadjaran)

Q : Any test conducted on the formulation?
A : The formula uses a combination of two tests but did not succeed in the tests. It may be used other combinations

Q : Which method is used in research?
A : At first using wet granulation first and then do direct compressed

**Ethanolic Extract of Secang (*Caesalpinia sappan* L.) Wood Performs as Chemosensitizing Agent on Resistant Breast Cancer MCF-7 Cells**
Rahmi Khamsita (Faculty of Pharmacy, Universitas Gadjah Mada, Yogyakarta)

Q : The compound is contained in a secang that acts as an anticancer?
A : Brasilin

**Losartan Nanoparticle Formulation With Chitosan as a Carrier and In Vitro Transdermal Test**
Nuri Ari Efiana (Faculty of Pharmacy, Ahmad Dahlan University, Yogyakarta)

Q : Why use a factorial design is not SLD?
A : Factorial design is more simple

**Effect of Sarang Semut Tubers (*Myrmecodia tuberosa* (non jack) bl.) on TCD4+ and TCD8+ Cells Profile of Doxorubicin-Induced Sprague Dawley in Vivo**
Sumardi (Faculty of Pharmacy Gadjah Mada University)

Q : Why choose TCD4+ cells and TCD8+?
A : TCD4 + is part of the immune system that delivers the immune response. TCD8 + cytotoxic cells are used for.

**Estrogenic Effects of The Ethyl Acetate Fraction of *Pachyrrhizus erosus* (L.) urb. tubers on Blood Cholesterol Level and Bone in Ovariectomized Sprague Dawley Rats**
Fransiska Leviana (Faculty of Pharmacy Gadjah Mada University)

Q : The results showed estradiol have different effects on rats and humans. How do apply the results from rats to humans?
A : Rats and humans have different lipoapoprotein affinity to HDL. The evidence suggests a decrease LDL but showed no increase in HDL.

**Author : Noer Khasanah**

Q : In our screening the gene using a bacterium, is possible to use bacteria to produce metabolites standard because some bacteria insect?
A : if you have poliketide this is no problem but if not you can push the microorganism to produce halogenated compound you like by good precursor.
Author: Kumala Dewi
Question:
you do a lot of treatments to increase / decrease the content so why you save this product?
what different lighting effects to produce x in this study?
Answer:
This study carried out determinations Andrographolide so just check the other contents of secondary metabolites.
provide stress conditions for secondary metabolite is an adaptation of the plant during stress conditions.

Author: Maria Ja’afar
Q:
to detect sildenafil, is there a limit of detection? how the specific characters?
whether the method can be used when there are two compounds?
Is it can be used for thermal characteristics?
A:
On this project used a variety percent sildenafil, so if we increase the sildenafil in the mix then the peak in the thermogram will also be the highest and dominant, so for the limit of detection if you ask about this actually seen from the quantity of sildenafil detection is similar to paracetamol. This method is only used for qualitative screening, not for quantitative. In Malaysia is used as a fast scanning to see the active ingredient.
Yes, certainly can. In sildenafil used to detect the nature and characteristics but I do not show here.

Author: Wahyuning Setyani
Question:
microbes that are used all sorts, how each activity, which are most effective?
Answer:
tested antimicrobial and antifungal where the Sarang Semut have antimicrobial activity, antimicrobial test used S.aureus and E. coli, E.coli inhibition exists but not as much by S. aureus. while the antifungal test used C.albicans but not active

Lanny Hartanti
Q:
how to determine the active site of receptor?
whether this research has been done until in vivo?
whether the results of this method can be said to be valid because this method uses small angstrom?
A:
active site of protein analog selected because the protein will bind to the receptor. Cavity no.1 of the PDB structure is too interacted, and with computers that have chosen a smaller energy.
Not yet, here only selected to give a smaller energy, where the less energy necessary given the predicted effects to be better.
I'm sorry, I am not aware whether requiring small / large angstroms, which I use as the primary parameters of the potential which is seen from moldock score / rerank score that most small

Tunggul Adi P
Q: How do you fix the compartment models?
A: C onform the human activity from the data so the data is obtained from the human population, here be increased to include an important factor. more factors including the models so we can expected this
Faculty of Pharmacy
Universitas Gadjah Mada

With high appreciation presents

Certificate

to

Muhammad Yanis Musdja, Amir Syarif, Ernie Hernawati Poerwaningsih, Andria Agusta

For the participation as authors of
MODULATION OF MACROPHAGE IMMUNE RESPONSES OF EXTRACT MIXTURE OF BETEL LEAF (Piper betle, L), GAMBIER (Uncaria gambier, Roxb) AND CALCIUM HYDROXIDE ON PHAGOCYTOSIS CELL OF MICE

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