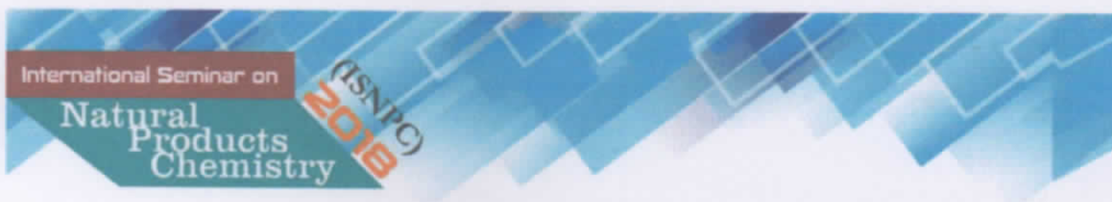


Thursday, 13 September 2018

Time	
08.00-10.00	Parallel Session 1
10.00-10.30	Coffee break and Poster Presentation
10.30-12.30	Parallel Session 2
12.30-13.30	Lunch and Poster Presentation
13.30-16.00	Plenary Session 5 and Exhibition Presentation (Moderator: Prof. Dr. Yana Maolana Syah) 13.30-14.30 Prof. Young Ho Kim 14.30-15.30 Dr. Norizan Ahmat 15.30-16.00 Bruker
16.00-16.10	Closing Ceremony
16.10-16.20	Coffee break

International Seminar on Natural Products Chemistry (ISNPC) 2018

Parallel Session 2 (Thursday, 13 September 2018, 10.30-12.30)

Room A Chairperson: Dr. Siti Aisyah	Room B Chairperson: Dr. Pinus Jumaryanto	Room C Chairperson: Dr. Rini Muharini
OP28 Qivi Azizah	OP38 Muhammad Yanis M.	OP48 Akhmad Darmawan
OP29 Hanhan Dianhar	OP39 Riza Apriani	OP49 Nurul Ambardhani
OP30 Santi Amelia Sari	OP40 Fahrauk Faramayuda	OP50 Orin Inggriani N.
OP31 I Wayan Mudianta	OP41 Aji Najihudin	OP51 Rosmawaty
OP32 Anceu Murniati	OP42 Dian Nugraheni	OP52 Eri Bachtiar
OP33 Muhammad Widyo	OP43 Desi Harneti	OP53 Elok Kamilah Hayati
OP34 Wiro Naibaho	OP44 Hamizah Muhamad	OP54 Elvira Hermawati
OP35 Asep Supriadin	OP45 Risa Erlinda Octarina	OP55 Dian Angrianis
OP36 Fera Kurniadewi	OP46 Pramukti Nawar Raidah	OP56 Ana Hidayati M.
OP37 A. Ghanaim Fasya	OP47 Tati Herlina	

ROOM C
(Capital 1)

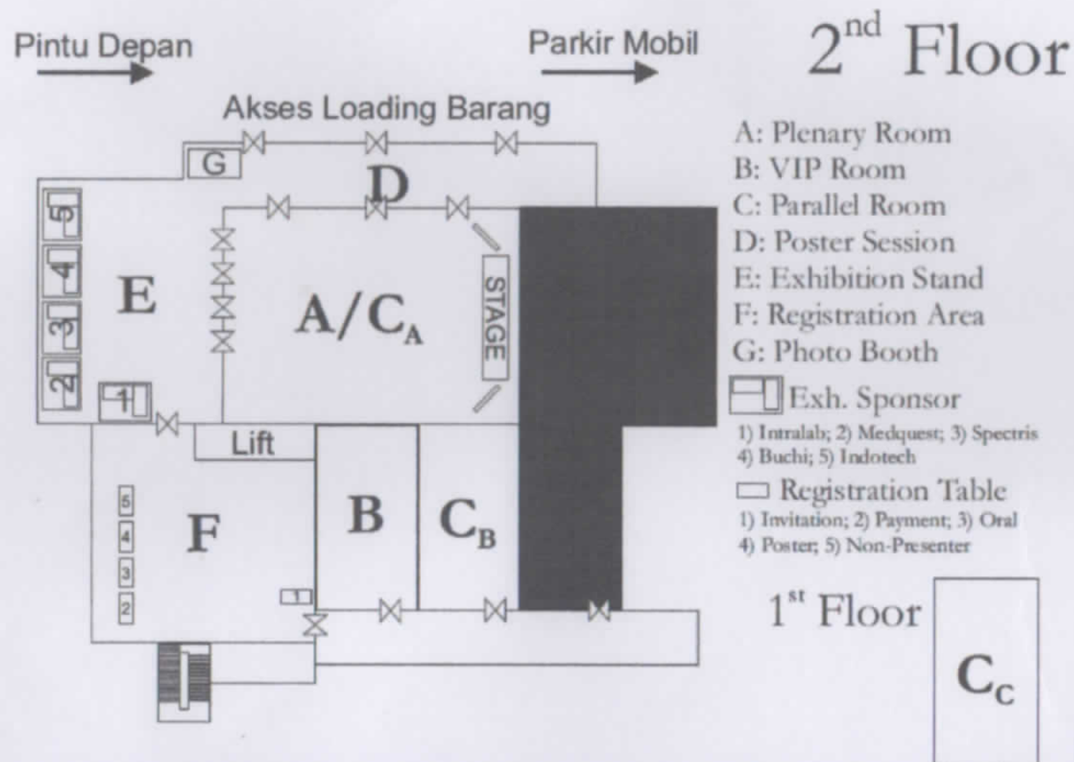
Session 2

Chairperson: Dr. Rini Muharini

Code	Presenter	Title
OP48	Akhmad Darmawan	Prenylated Flavonoid Isolated from Macaranga mappa
OP49	Nurul Ambardhani	The Cytotoxic Activity of Erythrina poeppigiana Stem Barks Extract Against Breast Cancer MCF-7
OP50	Orin Inggriani N.	Synthesis of Linear Tetrapeptide PLAI and Its Analogues by Solid-Phase Peptide Synthesis with Their Antibacterial Activity
OP51	Rosmawaty	Resveratrol Oligomers of Indonesian Shorea (Dipterocarpaceae)
OP52	Eri Bachtiar	Pongacin from Tephrosia Vogelii as Antibacterial Compound against Vibrio Harveyi, Vibrio Alginolyticus and Vibrio Parahaemolyticus
OP53	Elok Kamilah Hayati	Anticancer Activity of Sourshop (Annona muricata Linn.) Leave Extract Loaded on NaX Zeolite Againts Breast Cancer T47D
OP54	Elvira Hermawati	HUVECs Proliferation Inhibitory Activity and Cytotoxic Activity of Phenolic Constituents from Garcinia mangostana
OP55	Dian Angrianis	Two Chalcone Derivatives From The Tree Bark of Cryptocarya morotaiense
OP56	Ana Hidayati M.	The inhibitory Power of Ethanol Extracts of Aloe vera Skin on Bacteria Growth Proteus sp.
OP57	Alfonds A. Maramis	Extrinsic pathway apoptosis caused by formalin-containing fish: normalization of TNFa overexpression by chlorophyllin
OP58	Dewa Gede Katja	Secondary Metabolite Chisocheton Plant (Meliaceae) In North Sulawesi As Well As Cytoxyte Activities On Murin Leukemia P-388

International Seminar on Natural Products Chemistry (ISNPC) 2018

ROOMS MAP OF ISNPC 2018
HOLIDAY INN HOTEL – PASTEUR, BANDUNG



Excessive use of antibiotics in the long term and inappropriate, such as irregular consumption of drugs that can encourage drug resistance[9], therefore requires efforts to develop traditional medicines. occurrence of resistance, such as Aloe vera[6]. Research[10] used *aloe vera* bark extract with concentrations of 10, 25, 50, 75 and 100 %b/v. The power of aloe vera inhibition with a concentration of 75 and 100% v forms a clear zone of 11.58 mm and 6.81 mm, and can inhibit and kill the growth of Staphylococcus aureus and Escherichia coli bacteria. In the study of [11] showed the presence of antibacterial activity of aloe vera infusion with variations in concentrations of 20, 40, and 60 %b/v. The infusion concentration of 60 %b/v aloe vera leaves inhibited the growth of *Pseudomonas aeruginosa, Salmonella typhi*, and *Staphylococcus aureus* bacteria with clear zones 16.5 mm respectively; 34.00 mm and 15 mm.

Based on the description above, it is necessary to do research on the inhibitory power of aloe vera extract with variations in sump volume of 200 mg, 250 mg, 300 mg and 350 mg to the growth of Proteus sp bacteria. The specific purpose of this study was to measure the inhibitory power of aloe vera bark extract (Aloe Vera) and analyze the inhibitory difference in power of ethanol extract of aloe vera bark with variations of extract weight of each well 200 mg, 250 mg, 300 mg and 350 mg against the growth of *Proteus bacteria sp. The leaf extract can be used as an herbal medicine and as an antimicrobial material, especially Proteus sp.*

Material and Methods

This research method is an experiment, with the independent variable of aloe vera ethanol extract with variations extract volume in wells 200 mg, 250 mg, 300 mg and 350 mg, while the dependent variable is the growth inhibition zone of *Proteus sp.* and the research design as shown in Table 1.

Table 1. Effect of *aloe vera* ethanol extract variations on the growth of *Proteus sp.*

Repetition	Amount of thick extract of aloe vera in wells (mg)			
	200	250	300	350
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6

The tools used in this study include autoclaves, incubators, ovens, lamp spritus, petri dish lighters, chemical beacers, erlemeyers, tubes, aluminum foils, magnetic stirrers, shovel runners, blenders, analytical balance sheets, Waterbaths, cork borer, filter paper, funnel and tweezers. *Aloe vera* leaf extract, MHA (Muller Hinton Agar) medium, BHI (Brain Heart Infusion), MC (Mac Conkey), HIA (Heart Infusion Agar), sterile distilled water 96% ethanol, Mc Farland standard 0.5%, NaCl 0.9%, and culture of *Proteus sp.*

Procedure

Sterilization of Tools and Materials

The tool to be used in this study was washed, dried and wrapped in paper, then sterilized in autoclave for 15 minutes at 121°C, 2 atm pressure for 15 minutes. After that it is dried in an oven with a temperature of 100 °C.

Synthesis of Ethanol Extract of *Aloe Vera* Leaves

Aloe vera leaves are cleaned with water until they are clean and drained, then separated by *Aloe vera* leaves from *Aloe vera*. The simplicia in powder form is easier to get its contents. 300

grams of *Aloe vera* leaves powder was soaked with 96% ethanol solution for 3x24 hours while being shaken every 4 hours (maceration method). The first day used 96% ethanol as much as 500 ml, second day 300 ml, and the third day 200 ml. Then it was filtered and the filtrate was collected in a glass beaker and closed using evaporated aluminum foil and then in the evaporator the extract was evaporated using a water bath to obtain a thick extract. Thick extract obtained as much as 19 grams.

Bacteria Preparation Test

Making MHA (Muller Hinton Agar) Media

MHA (Muller Hinton For a thickness of 0.6 cm) in a petri dish with a diameter of 9 cm and a radius of 4.5 cm.

Rejuvenation of *Proteus sp*

Proteus sp. made a suspension by taking one colony put into liquid BHI (Broth Heart Infusion) media in a test tube, then incubated at 37 °C for 24 hours. Suspension planted on medium MC (Mac Conkey Agar) incubated at 37 °C for 24 hours, convex colony culture, color less (colorless) and slippery properties, followed by biochemical tests namely Indol (-), MR (Methyl Rad) +/-, VP (Voges-Proskauer) +/-, Sirat +, Motil (+), Urea (+), Lactose (-), Glucose (+), Sucrose (-) and are NLF (Non Lactose Fermenter). Grown Colonies on MC (Mac Conkey Agar) media were planted in HIA (Heart Infusion Agar) media and incubated at 37°C for 24 hours. The pure culture of Proteus sp was taken using ose eyes, then made a test tube containing 0.9 % NaCl (physiological), homogenized, and suspension turbidity equated with 0.5 Mc Farlan which is equivalent to 1.5 x 108 cells/mL.

Testing of Ethanol Extracts of Aloe Vera Skin on Proteus sp.

MHA (Muller Hinton Agar) media is scratched by Proteus sperms that have been in accordance with Mc Farland 0.5 using steri cotton sticks and allowed to stand for 5-10 minutes and made 3 wells with a width of 1 cm and a well spacing of 2 mm. The first petri dish was added 200 mg thick extract of aloe vera leaves, then incubated at 37°C for 24 hours. The inhibitory diameter zone was measured using calipers to determine the inhibitory power of aloe vera extract against the growth of Proteus sp. The same is done for the volume of ethanol extract 250 mg, 300 mg, and 350 mg and positive control is used antibiotics chloramphenicol.

Data Collection and Analysis Techniques

The data used is multivariant. The data were analyzed using Kolmogorova-Smirnov test, then normal data were tested using One Way Anova and if the data were not normally distributed using Kruskal-Wallis.

Results and Discussion

The inhibitory power of ethanol extract of aloe vera leaves on the growth of Proteus sp bacteria. shown in Table 2.

Table 2. Results of the average test of the inhibitory power of ethanol leaves on *Aloe vera* leaves on the growth of *Proteus sp.*

Inhibition zone with weight variations of *aloe vera* extract (mm)				
200	250	300	350	Control of chloramphenicol antibiotics (mm)
0.00	3.33	16.33	19.33	30.00

Table 2 shows that the average diameter of inhibition by weight of 200 mg of Aloe vera bark extract had no inhibition zone diameter, while the extract weight of 250, 300 and 350 mg were 3.33 mm 16.33

mm and 19, respectively. 33 mm, positive control of chloramphenicol antibiotics has a diameter of inhibition of 30.0 mm and negative control using aquades does not inhibitory power form. The weight of the inhibitory force is formed. Increased inhibitory power of aloe vera ethanol extract on the growth of Proteus sp. can be seen in Figure 1 and Figure 2.

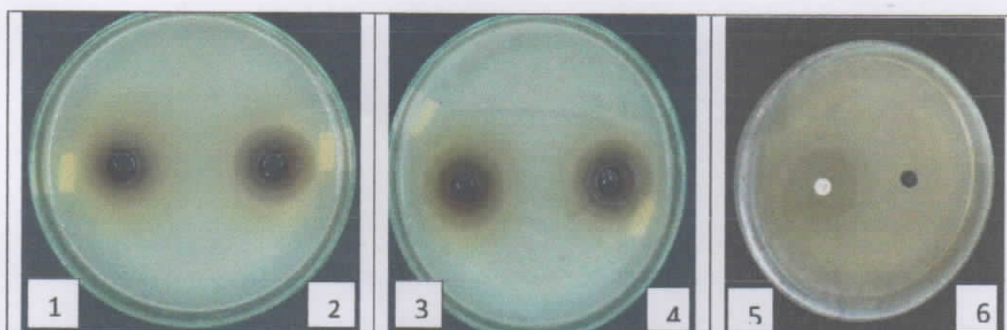


Figure 1. Inhibitory power of ethanol extract of *aloe vera* leaves on the growth of *Proteus sp* bacteria and negative control and negative control: 1) 200 mg 2) 250 mg 3) 300 mg 4) 350 mg 5). Positive control, and 6). negative control.

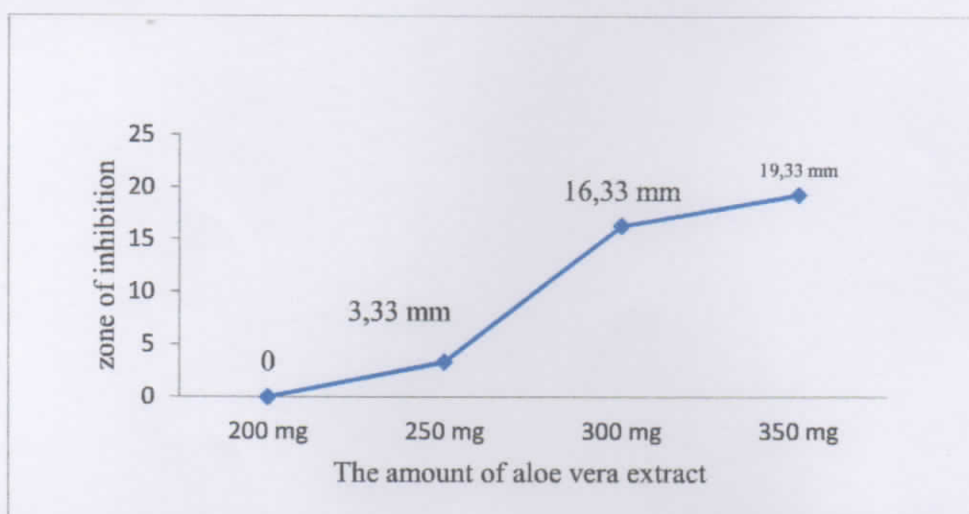


Figure 2. Graph of inhibitory power of *aloe vera* ethanol extract on the growth of *Proteus sp.*

Data Analysis

Primary data were tested for data analysis of ethanol extract of aloe vera bark on the growth of protein tests obtained p value = 0,000 smaller than the standard value of $p > 0.05$, so indicate that the data is not normal. The results obtained in the Kruskal-Wallis test are p = 0,000 where the value is less than the standard value of $p < 0.5$. This is the difference between extract and the growth inhibitory capacity of *Proteus sp.*

The ethanol extract of Aloe vera leaves can inhibit the growth of Proteus sp bacteria, but has not been able to kill the Proteus sp. because the inhibitory power at the volume positive weight control is used, namely the weight volume of aloe vera ethanol extract in rows of 250 mg, 300 mg and 350 mg has an average inhibition zone diameter of 3.33 mm; 16.33 mm and 19.33 mm and the weight of extracts of 200 mg in the inhibitory zone form, while the inhibitory power of the positive control of chloramphenicol antibiotics was 30.0 mm. Based on the diameter of the antibiotic inhibitory according to the Clinical And Laboratory Standards Institute chloramphenicol inhibitory power is categorized into resistance, intermediate and sensitive.

Table 3. Diameter of chloramphenicol antibiotic inhibitory power

Diameter of inhibitory zone (mm)	Description
<14	Resistance
16-17	Intermediates
>18	Sensitives

Based on the assessment of the diameter of antibiotic inhibitory power according to CSLI ethanol extract of aloe vera with a volume weight of 200 mg can be said to be resistant, intermediate or sensitive because there is no clear zone, at a weight of 250 mg included in the classification of resistance, whereas at the weight of 300 mg is classified as intermediates and weight of 350 mg is said to be sensitive because of the inhibitory forces formed above 18 mm. The results obtained by the weight increase of aloe vera ethanol extract, because the skin of aloe vera leaves contains chemical compounds such as anthraquinones, flavonoids and saponins[12].

Anthracinone works by inhibiting protein in the media containing aloe vera extract. Anthraquinone has antibacterial activity with a mechanism that interferes with the peptidoglycan components of the bacterial cell wall. contain glycosides which have antiseptic effects, work by disrupting the stability of bacterial cell membranes, causing lysis and damage to cell membranes due to the release of important components in the cell membrane[13].

Proteus sp. is one gram negative bacterium that has a high level of resistance to antibiotics[14] Anthraquinone is a component of the outer membrane of the cell, causing changes in permeability and causing the cell to leak. This change in membrane permeability will cause the release of cellular metabolites[15]. Antibiotic resistance occurs due to Proteus sp. able to produce a small amount of β-lactamase enzyme that can hydrolyze the β-lactam ring produced by antibiotics in bacterial cell wall shedding[16]. Positive control in this study is the disk of antibiotic chloramphenicol has bacteriostatic properties and works by inhibiting protein synthesis. The mechanism of action of chloramphenicol by inhibiting the enzyme peptidyl transferase which acts as a catalyst to form peptide bonds in the process of bacterial protein synthesis[17]. Chloramphenicol resistance to antibiotics is caused by the enzyme chloramphenicol acetyltrasferase which is owned by bacteria, which can destroy antibiotic activity. This shows that the Proteus sp. sensitive to chloramphenicol antibiotics but does not have the enzyme chloramphenicol acetyltrasferase which can cause bacterial death.

Conclusion

Based on research conducted on the inhibitory power of aloe vera ethanol extract on the growth of Proteus sp bacteria it was concluded:

The diameter of the inhibitory zone of *Aloe vera* leaf extract is 250 mg, 300 mg, and 350 mg to the growth of Proteus sp bacteria with ethanol extract, the skin of *Aloe vera* leaves has a clear zone, respectively 3.33 mm, 16.33 mm, and 19.33 mm, while in the ethanol extract of *Aloe vera* 200 mg there was no inhibitory zone and the positive control inhibition zone used by chloramphenicol antibiotics was 30.00 mm. Ethanol extract of aloe vera has the ability to inhibit the growth of *Proteus sp* bacteria.

Suggestion

Further researchers are expected to conduct further research on the ethanol extract of aloe vera leaves on the Gram-positive bacteria such as the Clostridium tenani bacteria.

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